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JOURNAL
OF THE
ASIATIC SOCIETY OF BENGAL,

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VOL. XXI.

Nos. I. TO VII.—1852.

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“It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die away if they shall entirely cease.”—SIR WM. JONES.

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1853.



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* Withdrawn by the author, as irrelevant to his paper on the Dust Whirlwinds.

† Not received vide Note at the foot of page 621.

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* Not received : vide note at the foot of page 621.

ERRATA.

In Dr. Baddeley's paper On Dust Whirlwinds, *for* "Plate 1" *read* Plate 2, *for* Plate 2, *read* Plate 3, *for* Plate 3, *read* Plate 4, *for* Plate 4, *read* Plate 5.

JOURNAL

OF THE

ASIATIC SOCIETY.

No. II.—1852.

On the Connection of the Dative and Accusative cases in Bengali and Hindustáni.—By the Rev. W. KAY, Principal of Bishop's College.

While the comparative investigation of grammatical *forms* has engaged the attention of many learned men in Europe, (it is hardly necessary to mention Bopp in particular) there is a wide field for philological speculation yet (so far as I am aware) unexplored in the comparison and explanation of grammatical *laws* and *constructions*. This last higher and more interesting inquiry pre-supposes the first, but forms its necessary complement.

It is as far from the purpose of the writer of the present sketch, as it is from his ability, to supply this desideratum. But as the subject referred to in the heading is not uninteresting in itself, and the discussion may rouse the activity of minds better qualified to take up the work, it is thought a few brief remarks, *pour servir*, may not be out of place in this journal.

I. *What are the facts of the case?*

In Dr. Yates's Bengáli Grammar we are told "The dative case is usually made by ঢে, like the objective;" and afterwards in the syntax "verbs of *giving* and *communicating to*, govern the dative case, which however most commonly has the same form as the objective."

In Sama Churn Sircar's Grammar we have a more detailed statement, to the effect that only *personal* nouns have the termination ঢে

In English, and most modern European languages, all nouns have the same form in the nominative and accusative.

In Turkish the accusative is identical with the nominative, when it is *indefinite* and immediately precedes the verb.*

In Hebrew the two cases are the same, except that defined nouns (i. e. nouns with the article, or in construction) are frequently preceded by *ל*.

In Armenian† exactly the same holds; the nominative and accusative coincide except that *za* is prefixed to *defined* nouns.

III. *Specific analogies.*

The above inferences, drawn from the facts of the case, and supported in part by the general analogy of other languages, are still liable to the charge (which it is so hard to rebut) of theorizing. But fortunately we have some more special analogies to present in confirmation of what has been said. For

(1) In the Persian, we find, that when the noun is indefinite, the accusative coincides with the nominative; but that if the noun be *defined*, *ی* is suffixed, this *ی* being *also used to express the dative*.

(2) In the Syriac, the dative and accusative have a prefixed *ܝ* (= Engl. *to*) as their common characteristic. Now this *ܝ* may be dropped in the accusative, especially if the noun is indefinite, but cannot in the dative.‡

(3) In the Spanish, when the object of a verb denotes *a person*, it is regularly preceded by the preposition *á*, i. e. by the common sign of the dative.§

Now (whatever may be said of the Persian), there can, at least in the two last instances, be no question about the accusative form's being borrowed from the dative.

IV. *The rationale of this inferred fact.*

On the hypothesis of the termination's belonging properly to the

* Kazim-Beg's "Turkish-Tatar Grammar."

† Petermann's Arm. Gr. "Accusativi forma à formâ nominativi diversa non est, &c."

‡ Uhlemann, Syr. Sprach-Lehre: § 75.

§ *Him, whom, and them*, were originally datives. See Dr. Latham "On the English Language."

accusative, no explanation can be given of its being transferred to the dative. Indeed such a transference would be contrary to all analogy.*

But on the converse hypothesis we *can* explain how the dative came to be used in an objective sense.

The action of a verb may be direct or indirect. Some verbs denote an action which operates immediately upon an object, implying a transmission of power from the agent upon it, (e. g. striking, burning, teaching, &c.) In all these the objective is employed. But there are other verbs where the action is not direct or immediate, which, in fact, imply little more than that the subject and object are connected or occupy a certain relation to each other: (e. g. pleasing, consenting, trusting, &c.) In this latter case the dative might easily come to be thought the more appropriate for designating the object.† Such is, actually the case in Latin, Greek, Anglo-Saxon, German, French, and Turkish. The usage once introduced would have a tendency to spread, wherever the object of the verb was to be brought prominently into notice, not merely as an object, but as a *recipient*; until at last the dative in some languages might come to be looked upon as an actual form of the accusative.

This explanation agrees with what, we have seen, prevails very extensively in the languages above-cited, viz. that the nouns to which the dative sign is attached in the accusative sense are chiefly *personal* nouns; for *things* are simply objects of an action rather than recipients of influence, *persons* are recipients rather than simply objects.

And there is another point to be noted. In languages like the Hindustáni and Bengáli where both the nominative and the objective *precede* the verb, some expedient would be found necessary to prevent confusion as to which was the agent and which the object. But

* The only instance that occurs to me, as possibly furnishing an exception, is that of the French pronouns *me*, *te*, *se*. e. g. Il *me* donne. But I believe that in such examples the *me* is only a shortened form of the dative *moi*, when deprived of the accent. At any rate when the accent returns the longer form recurs; as in *Donnez-moi*.

We may remark that this very *moi* furnishes an example of the dative used to give strong *objectivity* to the personal idea: as in “Voudriez-vous *me* perdre, *moi*, votre allié?”

† ‘Thanking’ or ‘praising,’ &c. being = ‘giving thanks’ and ‘bestowing praise,’ &c.

as inanimate things are comparatively seldom introduced as agents, the necessity for calling in the aid of a particle to signify that they were *not* agents, but objects, would be felt chiefly in nouns denoting persons.*

V. *The etymological relations of the dative particle.*

It may not be without its weight to observe that the other Bengáli form for the dative and accusative (এক) closely resembles the common genitive (এক). Now the dative is very nearly connected (on two different aspects) with *both* the genitive and the accusative. Grant the dative, then, as the intermediate starting point, and one can understand how the forms for the genitive and the accusative may approximate: but not otherwise.

Precisely the same will apply to the other terminations কে and کو, when compared with the Hindustáni genitive ك. We can understand the similarity of is-ko to is-ka, if ko be the original property of the dative, but not if it be a true accusative termination.

And now let us conclude with a conjecture; is not this termination the same with that which *universally marks the dative in the Tatar languages*? “The characteristic ending of the dative in the Tatar dialects generally is ك or ك ka or ke:—changed after a vowel or hard consonant into غ or غ gha or ghe” (*Kazim Beg, u. s.*) If so, may we not further infer that the basis of the Hindi-speaking races is not Indo-Germanic, but Mongolian?”



Foreign words occurring in the Qorán, by A. SPRENGER, M. D.

It is an unexpected and interesting fact that there occurs a foreign word in the first Súrah of the Qorán. The word sirát صراط we are told by Soyúty is Rúmee, i. e. Latin! and we have no difficulty in ascertaining from what term it is derived, we recognise at once in it the word *strata* (via) which has been preserved in the same

* To the same cause we may refer the use of نبي to designate the *agent* case. On the other hand the logical character of the arrangement of our nominative verb and object in English, is what enables us so readily to dispense with noun-inflections.

meaning which it has in Arabic—road—in almost every European language, in English we have street, in Dutch straat, German strasse, Italian strada, &c. The omission of the first *t* will not surprise those who are acquainted with the genius of the Arabic language. It has a tendency to make words tri-consonantal as I have shown at some length in my paper on the Physiology of the Arabic language. Nor does the orthography militate against the opinion of Soyúty, though De Sacy says the *ص* and *ط* are never used in writing foreign words. De Sacy is wrong. Comes is spelt قمص, Cæsar is spelt قيصر, Stephanus is spelt اصطفيان, στυπειον is spelt اصطبة, Aristotle is spelt ارسطو. There can therefore be no doubt but Sirát is a Latin word. But what may have been the reason for using a foreign word for expressing an idea for which the Arabic language had several terms?—Sirát has always a mystical sense in the Qorân, meaning religion, road to heaven, and it is likely that the same word was used by the Christians of Syria for expressing this idea.

I have an Arabic Manuscript entitled رسالة مهذبة في الالفاظ المعربة by Soyúty containing a list of the foreign words which occur in the Qorân. This list is also in the 38th chapter of his *Itqân fy 'olûm alqorân* by the same author which is being edited. It contains most of the words which the Arabs themselves consider of foreign origin, and only so far Soyúty's opinion can be of value, for his derivations from other tongues which neither he knew nor those whose authority he quotes, are very unsatisfactory. I did not think proper to swell this article by an attempt to supply this defect, but leave these investigations to others.

ابريق abáryq Súrah 56, 18. Persian, the paasage of water, a channel, an ewer.

ابب abb, Súrah 80, 31. Grass.

ابلعى abla'y 11, 46. Hebrew or Abyssinian, to absorb.

اخلد akhlad 7, 175. Hebrew, to rest upon.

الارايك aráyik 83, 23. Abyssinian, couches.

الاسباط asbát, *passim*. Hebr. tribes.

استبرق istabraq 76, 21. 55, 54. 18, 30. 44, 53. Pers. coarse brocade.

اسفار asfâr, *passim*. Syriac and Nabatean (i. e. Chaldean), books.

اىصر içr 3, 75. Nabatean (i. e. Chaldean), compact.

اكواب akwáb 88, 14, 56, 18. Nabatean, a water-pot.

ال ill, 9, 8. Nabatean or Hebrew, God. (This is the explanation of Soyúty but from the contents it would appear that *ill* means treaty in the Qorân and it is used in that sense by Notanabby in a former rhyming with ذمة)

أليم alym, *passim*. Zinjian or Hebrew, pain.

اواه awwáh 11, 77. Abyssinian, trusty (múqin) kind-hearted.

اواب awwáb 50, 31. Abyssin. a name for Christ.

اويي awwiby 34, 10. Abyssin. praise God !

الاولي والآخره úlá means usually in the Qorân this world but in 33, 33, it means the other world in conformity with a Coptic idiom. The Copts call this world ákhirah and the other world úlá.

باطائن batáyin 35, 54. Coptic, the garment or brocade which they put on over another dress.

باير ba'yr, *passim*. Hebrew, any animal of burthen.

بيع biya' 22, 41. Persian, church.

تقدير tatbyr 17, 7. Nabat. to slaughter.

تحت taht 19, 24. Nabat. belly, inside.

تنور tannúr 11, 42. Pers. oven.

الجبب jibt 4, 54. Abyssin. devil, sorcerer.

الطاغوت Tághút 4, 54 and *passim*. Abyssin. soothsayer.

حصب Haçab 21, 98. Zinjian, wood,—it is said that is a word used by the believers in Scriptures only, and not known to the Arabs.

حوب Húb 4, 2. Abyssin. a great sin.

الحواريون Hawáryyún, *passim*. Copt. fullers, washermen.

درست darasta 6, 105, Hebrew ; thou hast read.

دري dorryy 24, 35. Abyssin. shining.

دينار dynár 3, 68. Persian.

راعا rá'iná 2, 98. Hebrew, is a term of abuse.

رabbányyún, *passim*. Hebrew or Syriac, a rabbin.

ربيون ribhyyún 3, 140. Syr. rabbins.

الرحمن rahmán, *passim*, Hebrew : merciful, originally spelled الرحمن

رس rass 25, 40, 'ajamy, a well.

رقيم raqym 18, 8. Rúmy (Greek ?) tablet, or book, or according to others, inkstand.

رهو rahw 46, 23. Nabatean, easy ; according to others, Syriac, secure, comfortable.

زنجبیل *zaujabyl* 76, 17. Some say it is a Persian word, a spring in Paradise.

سجد *sojjad*, *passim*. Syriac, covering the head and face.

سجل *sijill* 21, 104. Pers. book, according to others Abyssin. man.

سجیل *sijjyl* 105, 4. Pers. compound of *sang*, stone, and *gil*, earth.

سرادق *sorádiq* 18, 28. Pers. the word is originally spelled *sarâ-dar*, house door, and it means threshold, others say it is derived from *sarâ-pardah*, the curtain of the house.

سریا *saryyá* 19, 24. Syr. or Nab. or Greek, river.

سفره *safarah* 80, 15. Nabat. readers (of a sacred book).

سقر *saqar*, *passim* 'ajamy, (i. e. foreign) hell-fire.

سكر *sakar* 16, 69. Abyssin. vinegar.

سلسبیل *salsabyl* 76, 18, is an 'ajamy (foreign) word.

سندس *sondos* 18, 30. Pers. and according to others Indian; fine brocade.

سیدھا *sayyid* 12, 25, husband—is not an Arabic word, some say it is Coptic.

سینا *sayná* 23, 20. Nabat. hill, and according to the *Itqán* it means beautiful.

شطر *shatr* 2, 139 and 145 and 146. Abyssinian, towards, opposite.

شهر *shahr*, *passim*. Syriac.

صراط *çirát*, *passim*. Rúmy, road, (in a mystical sense).

صر *çor* (from *çawr*) 2, 262. Nabat. to cleave, to cut.

صلوات *çalát* or *çolút*, or *çilwat*, or *çalawat*, or *çolwat* 22, 41. and *passim*. Hebrew and Syriac, Synagogues, the word is originally spelt *صلوتا*

طه *Tah* 20, 1. Abyssin. and Nabat. O man, according to the *Itqán* it means O Mohammas!

طفق *Tafaq* 7, 12. Rúmy: to intend (it is explained by *qacad* قصد)

طوبی *túbá* 13, 28. Abyssin. a name of Paradise. According to some *túbá* طوبا (with alif) is Syriac or Nabat. and means a hill. In the *Itqán* it is stated that it is an Indian word.

طتا *iná* 33, 53. Berber, looking.

انیه *anyyah* 88, 5. Hot, boiling.

الجهنم *jahannam*, *passim*. Hebr. or Persian, hell, derived from *گهنام* means *وجب* in the Abyssinian language.

- رامز ramz 3, 36. Hebrew, motion of the lips.
- سجین sijjyn 83, 7 and 8. is not an Arabic word.
- سينين synyn 95, 2. Abyssinian, beautiful.
- طوى towá 20, 12. Hebrew, man, some say it means at night.
- عبدت 'abbadta 26, 21. Nabat. thou hast killed.
- عدن 'adn, *pass.* Syriac, grape.
- عرم 'arim 34, 15. Abyss. channels in which the water collects and dries up.
- غسق ghassáq 38, 57. Turkey, cold stinking water—some say it is a word of Tokharistan.
- غیض ghydh 11, 46. Abyss. the water has decreased.
- فردوس firdaws 23, 11. Rúmy, a garden (it is evidently derived from Paradise) in Nabatean firdásá means grapes. Some say firdaws means a vineyard in Syriac.
- فوم fúm 2, 58. Hebr. wheat.
- قراطیس qarátys 6, 91 is not Arabic.
- قسط qist, *passim.* Rúmy, justice.
- قسطامی qostás 17, 37. Rúmy, a balance, justice.
- قصوره qaswarah 74, 51. Abyss. lion.
- قسیس qissys 5, 85. Hebrew, a sincere friend (çiddyq).
- قسیة qásiyah 9, 16, 'ajamy, a man with a bad heart, base coin.
- قط qitt 38, 15. Nabat. a letter or document, a book.
- قفل qofl 47, 26, is a Persian word, a lock.
- قمل qommal 7, 130. Hebrew and Syriac, louse, insect.
- قنطار qintár 3, 68. Rúmy, twelve ounces, some say it means in Syriac, filling a bull's skin with gold and silver. Some say it means in the Berber language one thousand mithqáls. Ibn Qotaybah says it means in the language of Africa Provincia 8000 mithqáls.
- قیوم qayyúm, *passim.* Syriac, wide awake, a person who does not sleep.
- کافور Kápúr, Pers. camphor.
- کفر kaffara 47, 2. Hebrew or Nabat. he forgave their sins.
- کفلان kiflân 57, 28. Abyss. double, in Nabat, two shares.
- کنز kanz, *passim.* Persian, a treasure.
- کور کورت kúwirat 81, 1. Pers. (probably from Kór blind.)
- لينة lynah 59, 5, in the language of the Jews of Madynah, a date tree.

مَتَكَا mottakáän 12, 31. Abyss. and Coptic, lemon.

مَرْجَان marjân 55, 22, a foreign word.

مَرْقُوم marqúm 83, 9. Hebr. written.

مَزْجَاة mozzát 12, 88, an 'ajamy word, some say it is a Coptic word, and means little.

مِسْك misk 83, 26. Pers.

مِشْكَاة mishkát 4, 35. Abyss. a lantern (الكوة الكوة).

مَقَالِيد maqályd 39, 63. Persian, a key.

مَلَكُوت malakút, *passim*, is spelt in Nabatean ملكوت and means kingdom.

مَنَاصٍ manác 38, 2. Nabat. taking flight.

مِنْسَاة minsaäh 34, 13. Abyss. a stick.

مَنْفَطِر monfatir 73, 18. Abyssin. filled.

مَهْل mohl 18, 28. Maghriby or Berber word.

نَاشِيَةٌ náshiyah 73, 6. Abyssin. to get up (at night).

هَدَنَّا hodná (from hawd) 7, 155. Hebrew, we repented our sins.

هُود Húd, ajamy instead of Yahúd or Júda.

هَوْن hawn 25, 64. Syriac or Hebrew.

هَيْتَ لَكَ hayta laka 12, 23. Coptic, come! in Syriac it means against thee or it is thy duty. In Hebrew it is هَيْتָלְךָ

وَرَا wará 18, 78. Nabat. in front.

وَرْدَةٌ wirdah 55, 37, is not Arabic.

وِزْر wizr, *passim*. Nabat. mountain, place of refuge, in the Himyarit dialect it means also mountain.

يَاقُوت yáqút, *passim*. Persian, a ruby.

يَحْوَر hawr 84, 14. Abyssin. to return.

يَاسِي yásyn 36, 1. Abyssin. man, O man!

يَصْدُون has the same meaning in the Abyssinian language as يَصْجُون in Arabic.

صَحْر çahr 22, 21, a Maghriby word.

يَمِّم yamm, *passim*. Hebrew, Nabat. and Syriac, sea.



Note on Col. Stacey's Ghazni Coins, by E. THOMAS, Esq. C. S.

In the year 1848 the Royal Asiatic Society of London, did me the honour of publishing in their Journal my Essay on "The Coins of the Kings of Ghazni," which had for its object the exhibition of a classified Catalogue of this particular section of Mr. Masson's most successful Numismatic gleanings in Afghánistán. Col. Stacey's collection* of Ghaznaví money, about to be described, will be found to furnish several supplementary dates and many unique and interesting additions to the general series, and as I have endeavoured to make this notice

* In lately passing through Cawnpore I had an opportunity of cursorily examining the late Col. Stacey's extensive collection of Coins, and by the kind permission of the present owner, Captain Wroughton, I was enabled to secure this series for publication.

Apart from the historical interest and typical novelty of many of the specimens thus entrusted to me, I am anxious to make known the contents of this division of Col. Stacey's Cabinet as a fair sample of the entire collection, as I am desirous of seeing these Numismatic Treasures promoted into some locality more accessible to Oriental Antiquaries, than they at present occupy in a private Cabinet in an out of the way station in the N. W. Provinces.

An opportunity of effecting this occurs at the present moment, as the whole collection is now for sale, and it is offered on the very equitable terms that the price shall be determined by any third party, being a competent judge of these antiquities, who may be elected by the intending purchaser and approved of by the seller!

A general idea of the extent and character of the collection may be formed from the following classified outline of its contents.

	Gold.	Silver.	Copper.
Greek and Bactrian,.....	..	137	251
Indo-Scythian,.....	11	10	445
Arsakian,.....	..	27	54
Sassanian,.....	..	50	84
Old Hindu,.....	..	375	487
Gupta and Saurashtran,.....	18	29	4
Rahtors of Kanouj,.....	15	2	2
Kabul and Kashmir,.....	2	55	875
Khalifat, Ghazni, &c.,.....	57	677	1399
Grand Total,...	103	1362	3601

so far complete in itself, by inserting full transcripts of the legends and engravings of specimens of the leading classes, I trust it will prove an acceptable contribution to the Journal of the Asiatic Society of Bengal, whose pages, I may remark, as yet bear no record of the coinage of the first Moslem Dynasty of Zábulistán.

I prefix a Table shewing the order of succession of the Ghaznaví Sultáns, together with a summary of the dates of accession of those contemporaneous Potentates whose names find a place on their medals.

A Table of the Ghaznaví Dynasty, &c.

Khalífs of Baghdád.	Dates of accession.			Kings of Ghazni.	Accessions.	Sámání Emperors.
	A.H.	A.H.	A.D.		AH.	
Al Mutí'h lillah,.....	334	350	961	Alptegín,..	350	Mansúr hin Nók I.
Al Táí'h lillah,	363	366	976	Ishak,	366	Nók hin Mansúr.
		367	977	Subuktigín,		
Al Káder hillah,.....	381	387	997	Ismaíl,....	387	Mansúr hin Nók II.
		388	998	Máhmúd,..		
				..	389	Abdal Malik hin Nók.
		421	1030	Muhammad.		
Al Káim he amerillah,..	422	421	1030	Masaúd.		
		432	1040-1	Muhammad.		
		432	1041	Módúd.		
		440	1048	Masaúd II.		
		440	1048	Abúl Hasan Alí.		
		440	1048	Abdal Rashíd.		
		444	1052	Toghral.		
		444	1052	Fero khzád.		
		451	1059	Ibrahím.		
Al Moktadí beamerillah,	467					
Al Mostazher billah, ..	487					
		492	1099	Masaúd III.		
		508	1114	Shírzád.		
		509	1115	Arslán.		
Al Mostarshid hillah,..	512	512	1118	Bahrám Sháh.	} Sanjar, the Seljúk Governor of Khorásán.	
Al Rashid billah,	529					
Al Moktafí leamerillah,	530					
		547	1152	Khusrú Sháh.		
Al Mostanjid hillah, ..	555	555	1160	Khusrú Malik.		

The second or reference number in the subjoined list of Coins indicates the heading, in the original Masson Catalogue,* under which each piece should be classed.

* I would take this, my earliest, opportunity of referring to a Review of my Essay by M. DeFremery, which appeared in the Revue Numismatique of Paris in

SUBUKTIGIN.

No. 1. [ii.] Silver, highest wt. 46 gr. Perwan, *Six Coins.**Reverse.*

الله
 محمد رسول
 الله نوح بن
 منصور
 صبيكتكين
 درة

Margin. Surah ix. 33, and lxi. 9.

Obverse.

لا اله الا
 الله وحده
 لا شريك له
 الطابع لله
 ر

Margin. — هذا الدرهم بفروان
 سنة ؟

Average weight 43.6 gr.

NOTE.—I have not any books of reference at hand to enable me to determine whether the two Coins, whose legends are transcribed below, have been published in any of the numerous continental works on Sámání money; but their association in date and in proximity of place of issue with certain of the earlier Coins of the present series, as well as the illustration they afford of the distribution of the territorial tenures of the day, will, under any circumstances, render their insertion in this place appropriate.

Extrâ No. A. Gold, Wts. 57 and 61 gr. Herât A. H. 360 and 361.

Reverse.

الله
 محمد
 رسول الله
 المطيع لله
 منصور بن
 نوح

Mar. محمد رسول الله المومنون &c.

Obverse.

الولي
 لا اله الا
 الله وحده
 لا شريك له
 محمد

Mar. Int. { بسم الله ضرب هذا الدينار
 بهرة سنة ستين و
 ثلثمائة [سنة احدثو] [alt.]

Mar. Ext. لله الامر من قبل &c.
 المومنون بنصر الله

1849. I need not here enter into the several questions raised by my Critic, but I may candidly plead guilty to one of the two, I am proud to say the only two objections taken against me. For the rest the notice is most encouraging for my further efforts! and is altogether written in so kindly a spirit as to demand my warmest acknowledgments.

ISMA'IL.

No. 2. [vii.] Silver, wt. 43 gr. *Rare.*

<i>Reverse.</i>	<i>Obverse.</i>
الله	لا اله الا
محمد رسول	الله وحده
الله منصور	لا شريك له
بن نوح	الطابع لله
اسماعيل	

Margins illegible.

MAHMÚD.

No. 3. [to follow xvii.] Gold, wt. 52 gr. Herát A. H. 413. *New Type.*

<i>Reverse.</i>	<i>Obverse.</i>
الله	عدل
محمد رسول الله	لا اله الا
يمين الدولة	الله وحده
وامين الملة	لا شريك له
نظام الدين	القادر بالله
ابو القاسم	بسم الله ضرب هذا ال بهراة
	سنة ثلث عشرة واربعماية

Margin. Surah ix. 33, and lxi. 9.

Mar. Int. Surah xxx. 4, 5.

No. 4. [to follow xviii.] Gold, wt. 62 gr. Ghazní A. H. 415. *Unique.*

<i>Reverse.</i>	<i>Obverse.</i>
الله	لا اله الا
محمد	الله وحده
رسول الله	لا شريك له
يمين الدولة	القادر بالله
وامين الملة	بسم الله ضرب هذا الدينار
ابو القاسم	بغزنة سنة خمس عشرة واربعماية

Margin. Surah ix. 33, and lxi. 9.

Mar. ext. Surah xxx. 4, 5.

Mr. Bardoe Elliot possesses a similar Coin of the Ghazni Mintage, dated
 اربع عشرة واربع i. e., 414, A. H.

No. 5. [xxii.] Silver, wt. 53 gr. *Rare.*

لله	لا اله الا
محمد رسول	الله وحده
الله منصور	لا شريك له
بن نوح	الطابع لله
سيف الدولة	ب ص
محمود	

Margins illegible.

No. 6. [xxv.] Silver, highest wt. 64 gr. *average 46.5 gr. Eight Specimens.*

<i>Reverse.</i>	<i>Obverse.</i>
* لله *	عدل
محمد رسول	لا اله الا
الله يمين الدو	الله وحده
لة وامين الملة	لا شريك له
محمود	القادر بالله
	يميني

Margins illegible.

Mar. &c. بسم الله ضرب هذا الدرهم

No. 7. [xxvii.] Silver, wt. 44 gr. Ghazni A. H. 395, four Specimens.

<i>Reverse.</i>	<i>Obverse.</i>
ه ر ه	يميني
محمد رسول الله	لا اله الا
القادر بالله	الله وحده
يمين الدولة	لا شريك له
محمود	ص د

Margin. S. xxx. 4, 5.

Margin. بسم الله ضرب هذا الدرهم
بغزته سنة خمس وتسعين وثلثمائة

No. 8. [No. xxx. &c.] There are 18 Coins in Col. Stacey's collection offering various subordinate modifications of the general type of the class just described. The leading trilinear legend of either area remains constant, but the monograms vary in their style and position—at times the word *عدل* is introduced at the top of the obverse field, and the *يميني* figures at the foot of the main inscription, *لله* also is seen to head the legend on the reverse—and the characters, in which

the name of Mahmúd is expressed, differ considerably in the several specimens, graduating from the formal letters of the old Kufic to the interlaced flourish of more modern writing. In some examples again, the titles *ابوالقسم* and in others *امين الملة* are engraved in fine lines within the areas, but the position they occupy is indeterminate.

Where decipherable, the obverse marginal legends usually purport that the piece was coined at Ghazní in A. H. 395 *et seq* ; but in many of these Coins the marginal spaces are filled in with mere unmeaning repetitions of short perpendicular lines and small circles, which last in imperfectly formed Kufic legends answer for either *و ه م* or *و ه م*.

No. 9. [to follow xliii.] Silver, wt. 37 gr. *Unique*.

<i>Reverse.</i>	<i>Obverse.</i>
الله	عدل
محمد رسول الله	لا اله الا
صلى الله عليه وسلم	الله وحده
القادر بالله	لا شريك له
يمين الدولة	ه يميني ه
وامين الملة	
محمد	

Margins illegible.

NOTE.—[No. liv.] While last year at Jhelum, I met with a variant of the elaborately designed copper money of Mahmúd described and figured under No. liv. of my list in the Jour. Royal As. Soc. The Jhelum specimen possesses the peculiarity of having the word *كوة* inserted before the name of the city of Ghazní [thus *بكوة غزنة*] This is the only instance within my knowledge of the use of this prefix in this series.

I am indebted to Sir H. M. Elliot for the reference to the subjoined notice of the impositions practised by certain Hindus, which led to an extensive deterioration in the local standard of Mahmúd's Silver coinage.

The Persian text appears defective, I however give it, as it stands, merely inserting variants from a second copy, without at present entering into any further remarks.

مذخذب از كتاب جامع الحكايات
ولوامع الروايات

حكايت آورده اند كه چون يمين الدولت ببادشاهي نشست واثار سياست
اودر ممالك برسيد حكماي هند رانها برانداختند [زدند] وحيلتی پيش
آوردند واول درمي [در] پيش آوردند تمام عيار وقيمتي فراخور بروي
نهادند چون يکچندي برفتند چون [و] رعيت درستدن صادق ديدند بتدريج
عيار باز كم كردند تا [و با] بازرگانان سود نقره مي كردند وخلق كم عياري
بديدند [نديدند] از اقصاي جهان درم نقره بهند مي بردند چون اين
فسار از حد بگذشت وعلاء الدوله ببادشاهي نشست روي بتدارك ان
خلل آورد و با بزرگانان راي زد كه اين را چگونه تدارك بايد كرد اشاره
كردند كه ان نقود را بدل از خزانه بايد آورد وبازرگانانرا عوضى بدادن
[بايد داد] علاء الدوله بفرمود تا از خزانه صد بارهزار هزار درم نقره اطلاق كردند
و بدار الضرب بردند و بمصالح بندگان خداي تعالى صرف كرد و اثر نيكنا مي
اودر اقطار جهان روشن گشت *

Dr. A. Fleming in his Diary of a Trip to Pind Dadun Khan, and the Salt Range, published in a previous number of the Journal Asiatic Society (Vol. 18th p. 661) gives a very complete description of the method of coining in use in the Mint at Pind Dadun Khan in 1848. The process indeed is the essential counterpart of that described by Abul Faz'l as obtaining in Akber's time.

If we may also assume that similar mechanical means were resorted to in the earlier days to which the above tale refers, we may satisfy ourselves of how easy it would have been to have had a mint in every house and how difficult it would be to prevent the issue by private individuals of money of an inferior standard.

MASAÚD.

No. B. [To preceede No. lviii.] Gold—*Mr. Bardoe Elliot.*

Reverse.

الله

محمد رسول الله

نا صردين الله

حافظ عباد الله

ظهیر خليفه الله

مسعود

Margin (as usual.)

Obverse.

القايم

لا اله الا الله

محمد و حده لاشريك له

القادر بالله

ولي عهد

Margin, illegible.

Margin Ext. (as usual.)

NOTE.—The above Coin displays with unusual completeness the various honorary titles by which Masaúd was designated.

As connected with the subject I transcribe from the copy preserved by Bihaki a detail of Masaúd's recognised titular designations as accepted by the Khalíf's Ambassador, in 423 A. H.

بسم الله الرحمن الرحيم من عبد الله ابن عبد الله ابي جعفر الامام القايم
بامر الله امير المؤمنين الى الناصر الدين الله الحافظ لعباد الله المنتقم من
اعداء الله ظهير خليفة الله ابي سعد مولى امير المؤمنين بن نظام الدين

Again in another place (under A. H. 424), our author entitles the Sultán

ناصر الدين الله وحافظ بلاد الله المنتقم اعداء الله ابوسعيد مسعود

Albírínis' enumeration, as found in the unique copy of his Kánún-i-Masaúdí which has lately come into the possession of Sir H. M. Elliot, varies but slightly, being to the following effect :

الملك الاجل السيد المعظم خليفة الله وناصر دين الله وحافظ عباد الله
المنتقم اعداء الله ابي سعيد مسعود

No. 10. [to follow 58.] Gold, wt. 57 gr. Ghazní, A. H. 423. *Unique*.

Reverse.

الله
محمد رسول الله
صلى الله عليه
الناصر الدين الله
مسعود

Margin. Surah ix. 33 and lxi. 9.

Obverse.

لا اله الا
الله وحده
لا شريك له
القايم بامر الله

Mar. int. بسم الله صر بهذا الدينار

بغزته سنة ثلث وعشرين واربعماية

Mar. ext. Surah xxx. 4, 5.

No. 11. [to follow 58.] Gold, wt. 54 gr. Ghazní, A. H. 423. *Unique*.

Reverse.

الله
محمد
رسول الله
عليه السلام
مسعود

Margin. S. ix. &c.

Obverse.

Area as in the last Coin.

Margins, as in the last Coin.

No. 12. [lviii.] Gold, wt. 69 gr. Ghazní, A. H. 428. *Unique.*

Reverse.

الله

محمد رسول الله

القايم بامر الله

ناصر دين الله

ابوسعيد

Margin. Surah ix. 33 and lxi. 9.

Obverse.

عدل

لا اله الا الله

وحدة لاشريك له

مسعود بن محمد

Margin. بسم الله الرحمن الرحيم

ضرب هذا الدينار بغزني سنة ثمان

وعشرين واربعماية

Mr. B. Elliot has a Coin of this type dated Ghazní 427, A. H.

I would draw attention to the modification that is seen to occur in the characters in which the legends of this Coin are expressed, as contrasted with those in previous use.

The change from the stiff outlines of the Kufic in Nos. 10 and 11, to the Persian writing in No. 12 is most marked, and illustrates effectively the lost supremacy of the Arabic tongue and the complete recognition of the more intelligible Persian as the Court language. Bihaki indeed shews that so early as A. H. 423 Masaúd's ministers had some difficulty in corresponding with the Court of Baghdád, and apparently still more in selecting fit speakers for the vivâ voce intercourse of Embassies, &c.

No. 13. [lxi.] Silver, broken Coin. Balkh A. H. [4] 22.

Reverse.

الله

محمد

رسول الله

عليه السلام

مسعود

Margin. Surah xxx. 4, 5.

Obverse.

لا اله الا

الله وحدة

لاشريك له

القادر باله

الدرهم ببلخ

سنة اثني وعشرين

A second specimen bearing similar legends varies in having the Khalîf's name engraved in full sized letters. The Coin retains the imperfect date of 420? *عشرين واربعماية*

No. 14. [lxii.] Silver, broken Coin.

الله
محمد
رسول الله
القايم بامر الله
مسعود

عدل
لا اله الا
الله وحده
لا شريك له
بسم الله
واربعماية

Margin.

ين

Margin. Surah xxx. 4, 5.

Before closing this notice of the Coins of Masaúd, I am anxious to make known an important variety of his Silver money, which has lately come into the possession of Mr. E. Bayley. The piece in its general outline and leading types corresponds closely with the common Bull and Horseman Coins of Samanta Deva (Jour. As. Soc. Vol. IV. pl. 36, figs. 3, 4, &c.) but it offers the peculiarity of displaying the name of مسعود engraved in well defined Kufic characters, on the field in front of the Horseman's face, or in the space usually held by the word عدل

A second similar specimen retains traces of the name of محمد occupying the same position.

I consider these pieces to be the produce of the metropolitan mint of the Hindu kingdom of Kabul, the site of which is not as yet satisfactorily determined—and it is in consonance with the usual policy of Mohammedan conquerors to suppose that the local mint was allowed to maintain its old style of issue, modified only by the impress of the name of the ruling Sultán.

This explanation may possibly account for the previously felt difficulty of there being no extant Ghaznáví Kufic Coins inscribed as struck at Kabul.

In my previous paper on the Coins of the Kings of Ghazní (p. 77) I quoted a passage from Abúl Fedá regarding Masaúd's territorial possessions—as some of the names are imperfectly determined I annex the following passage from Bihaki in further elucidation of the subject.

وامير المؤمنين منشوري تازة فرستد خراسان و خوارزم و نيمروز و
زابلستان و جمله هند و سند و جغاندا و ختلان و قباديان و ترمذ و قسدا

و مكران و دانشستان و كيكاهان و ري و جبال و سپاهان جمله تا عقبه حلوان
و كركان و طبرستان دران باشد و باخاقان تركستان مكاتيب نگند

MODÚD.

No. 15. [lxxix.] Silver, wt. 46 gr.

Reverse.

محمد رسول الله
القايم بامر الله
شهاب الدولة
مودود

Mar. illegible.

Obverse.

عدل
لا اله الا
الله وحده
لا شريك له
س

Mar.

بسم الله

No. 16. [lxxxiii.] Silver, wt. 55 gr.

Reverse.

* فتح *
محمد رسول الله
شهاب الدولة
وقطب الله
مودود

Obverse.

عدل
لا اله الا
الله وحده
لا شريك له
القايم بامر الله

Margins illegible.

IBRAHÍM.

No. 17. [to follow cix.] Silver, weight 48 gr. *Unique.*

Reverse.

• • •
محمد رسول الله
ظهير الدولة
الملك
ابراهيم
ع

Obverse.

الله
لا اله الا الله
وحده لا شريك له
القايم بامر الله
نصيري

Margins illegible.

No. 18. [cxxiii.] Silver, weight 42 gr. Two specimens.

Reverse.	Obverse.
• قاهر •	لا اله الا الله
محمد رسول الله	وحدة لاشريك له
السلطان الاعظم	القايم بامر الله
قاهر الملوك	ملك الاسلام
سيد السلاطين	نصيري
ابراهيم	

Margins illegible.

No. 19. [cxlii.] Silver, weight 44 gr. [Ghazní].

Reverse.	Obverse.
سلطان	الله
محمد رسول الله	لا اله الا الله
السلطان الاعظم	المسترشد بالله
يمين الدولة	عضد الدولة
بهرامشاه	سنجر
ع	

Margins illegible.

(Under No. cxl.) Since the publication of the Catalogue of Mr. Masson's Ghazní Coins, I have met with a specimen of Arslán's money of the Lahore Mint Type.* The Obverse bears the usual Bull of Siva with the legend श्रीसमन्त देव

The Reverse displays the words السلطان الاعظم ملك ارسلان

No. 20. [cxlix.] Silver, weight 46 gr. Two specimens.

Reverse.	Obverse.
ناصر	الله
محمد رسول الله	لا اله الا الله
السلطان الاعظم	Sic. —————
معز الدولة	المقتفي لامر الله
خشروشاہ	عضد الدولة
	سنجر

Margins contain no legends, but are filled in with dots.

* Jour. As. Soc. Beng. Vol. IV. Pl. xxxvi. Fig. 23 and xxxvii. Fig. 46.

Among other specimens of minor value Col. Stacey's cabinet contains :

1st. Two (mixed Silver and Copper) Coins of Khusrú Malik No. cliii.—having the imperfect imitation of the Bull Nandi in Toghra on the Obverse, with the King's name prefaced by the title of تاج الدوله on the Reverse.

2nd. Fourteen Coins of the common Type, No. cliv. (Pl. xx. Fig. 16, Ariana Antiqua).

3rd. One specimen of No. clv.

Col. Stacey's collection is likewise rich in Khwárizim Coins, which have been forwarded to me with the Ghaznaví series. However as I do not propose to take up this class of money at present, I confine my notice to a single Coin, which is remarkable as bearing the name of a new Mint, *Zemíndáwur*. The piece is of mixed Silver and Copper, in weight 48 grains. The Obverse and Reverse read through, but singular to say the marginal legends being completed thus — Reverse. ابو الفتح محمد — Obverse. السلطان الاعظم علا الدنيا والدين.

The inscription, in the Reverse Circular Area, commences the word زمين and the obverse centre gives the completion of the name داور — زمين داور —

On the Oriental character of certain Northern Antiquities.—By
GEORGE BUIST, Esq. LL. D.

I some time since received from Mr. Chalmers, of Auldbar, three copies of his splendid work on the Cross Stones of Forfarshire, one for my own use, the other two to be disposed of as I thought best. I have given one of them to the Bombay Branch of the Royal Asiatic Society, and cannot better bestow the other than on the oldest and most distinguished learned body amongst us, the Bengal Asiatic Society. The subject treated of by Mr. Chalmers, is, as will presently appear, decidedly Oriental, and the remarks I am about to make may probably have some influence in stimulating to enquiry on the subject: perhaps this may for the first time make some of your readers aware of the existence of a much closer relationship betwixt Oriental and Hyperborean Antiquities than they might be altogether prepared for.

Lest it might be imagined from the minuteness with which the most elaborate details are given, and the extreme beauty of the lithographs altogether, that they have been in any way embellished, I forward for the inspection of the Society a drawing book of my own, in which rough, half-finished sketches, having no pretension to artistship whatever, will be found of a large portion of the stones represented in the work of Mr. Chalmers; and it will be seen that the two coincide as closely as it is possible for first-rate lithographs to do with indifferent China ink or pencil sketches. My drawings were mostly made betwixt 1820 and 1835, more than twenty years before Mr. Chalmers' were dreamt of; and at the time referred to, there were a number of the Sculptures entire,—the most important being the Eassie Sphinx, to be referred to by and bye—which seem since to have become obliterated; and I have given a number from Fife, Perth, and Aberdeenshire, that will assist in illustrating what is about to be stated. In an article in a recent number of "*Blackwood's Magazine*" on these matters, the difficulty of obtaining correct drawings, and the diversity of appearances presented by the Sculpture according to the light in which it is viewed, is so enlarged upon, that the impression left on the reader is that much must be ascribed to the imagination. That it is not so, will be seen from a comparison of the lithographs with my drawings rude as they are. Every man accustomed to decipher moss-grown, or time or weather worn sculptures, whether in India or in England, has encountered the difficulties enumerated by Blackwood, which may always be surmounted by care and patience, so as to leave no doubt on the mind as to perfect fidelity of result.

For shortness sake I shall in the following observations make use of the name of "*Runic Stones*," generally applied to this class of monuments, stating at the same time that I feel satisfied that it is a misnomer, and that they have no connection whatever with the Danes, or any other modern European nation.

Runic Stones are unknown in the Continent of Europe, and are not to be found in any part of England or of Wales, or in the Southern Counties of Scotland—the Ruthell Stone belongs to a very recent period in comparison, and I am not aware of any of them being found to the South of the Forth and Clyde. There are five or six in different parts of Fifeshire, the St. Andrew's Stone Coffin being one of the most

interesting in existence : they abound in Forfarshire, and in the South-eastern portion of Perthshire, they abound in Aberdeen and Ross-shires, or generally over the region chiefly known as Pictland. There are abundance of Danish crosses in Man, with Celtic Crosses in the Hebrides and Western Highlands, bearing a close general resemblance to those about to be described, but sufficiently distinguishable from them to any one who has studied the characteristic feature of Runie stones. The crosses in Wales are of comparatively recent date—those in Ireland so closely resemble the Scottish stones and their origin is so deeply buried in the shades of antiquity, that, associated as they both are with the Round Towers, a class of objects equally mysterious and perplexing to antiquaries, and which clearly owe their origin to a date beyond that to which history, or even tradition extends, though we are disposed to assign them a common age and origin.

In a paper prepared for publication fourteen years since, and which appears in the second volume of the transactions of the Bombay Asiatic Society in 1843, I stated my belief that they had been brought into existence within our æra, and had some connection with the Christian faith, or with the going out of the old creed and coming in of the new, I have since then seen reason to alter my views, and to come to the conclusion that the class of monuments called Runie stones came into existence more than two thousand years ago, and were meant, in many cases, to represent Oriental animals or objects, being sculptured at a time when there was some traditional or actual connection betwixt this portion of Great Britain and the East, which had ceased to exist long before the Norman invasion. It is on these grounds I have taken the liberty of addressing myself to the Bengal Asiatic Society, in hopes that by this means some glimmering of light may be thrown on a matter of such interest and obscurity.

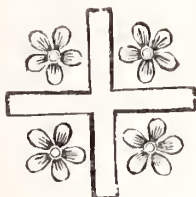
It appears to me one of the strangest things in the history of archaeological research that we should for years have been hunting out the antiquities of Athens, Egypt, and Syria, and latterly should have devoted ourselves to the collection of monuments of antiquity from Central Asia and Assyria, while we leave a class of relics bearing on the early history of our own country, neglected at our doors, and perishing before our eyes.

Since the Thirteenth Century, when the Church of St. Vijeans, near Arbroath, in the basement of which one of them is found as a foundation stone, was constructed, they have received no reverence from any one, and no mercy at the hands of the stone mason, having been built into house walls, or field enclosures, and broken up and destroyed as often as it suited. At this moment two of the finest Runic stones in Scotland stand as gate posts at Dukeld Church Yard ; one of them turned upside down !

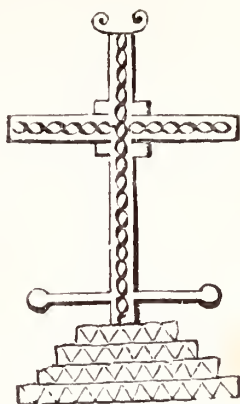
At Monike one, and at St. Vijeans, as already stated, a second is built into a Church wall : at Dunnichers one forms a portion of a park dyke ; at Cossens, near Glamis, another serves as a rubbing post for cattle—to the very great disgrace, as it appears to me, of the antiquaries of my native country.

The monuments under consideration are generally single oblong blocks of stone, of from three to eighteen feet in length, and from one to fifteen in breadth, mostly in the form of the grave stones in country churchyards. They for the most part have a cross, of the form commonly called the Cross of Calvary, sculptured on them—in many cases they are fashioned in the form of a cross. There is no single instance in which a crucifixion is represented, or in which the cross is provided with the tablet at top always found in the crosses seen in Catholic Churches for the superscription of “ King of the Jews.” The arms of the cross are almost always united by a richly sculptured circle or ring, and the shaft and limbs are covered with most elaborate sculptures.

The cross is far from being an eminently Christian symbol : they are often found in Oriental sculptures. The following is an outline of a cross very much resembling those of the Scottish monuments, copied from the vestment of a Coptic Priest, now in the British Museum, and believed to belong to a date 600 B. C. at least, together with a cruciform ornament, of which there are abundance of examples on the Catacombs recently opened near Alexandria, and at least 2000 years old.



Part of an ornament. Catacombs.



Coptic cross, 600 B. C.

Sometimes Runic stones are found as sculptured slabs—in one case a set of them have obviously formed a stone coffin : there are probably about two hundred of them still in existence betwixt Edinburgh and Caithness—by far the largest and most magnificent is Suenos pillar, in Murrayshire, of which, so far as I know, there is no correct or trustworthy representation in existence !

The merely ornamental portions of the sculptures consist of the most elaborate tracery, in which the interlacement of serpents and lizards, or monstrous creatures betwixt the two, are prevalent. Several favourite Egyptian ornaments make their appearance, and though the workmanship be rude in the last degree, the sculptor having obviously begun without a drawing, or without so much as outlining the design meant to be engraven, as may be seen from the way in which the figures are distorted and crammed together at the place last finished, it is clear the conception of the original designer was an able and an elegant one.

The pictorial part of the sculpture consists of the representation of deer-hunts, where we have the great blood-hounds pulling down the deer, with all varieties of lesser dogs—trumpeters, and bowmen, and spearmen, on foot, and richly-attired riders on horse-back ;—of religious or other processions of men, with arms or branches in their hands,

and so forth of the same general character as that of the far-famed Nimroud obelisk, though of infinitely inferior execution; of warlike encounters where we have on the Aberlemno stone, in Mr. Chalmers' collection for example, horsemen charging a phalanx of foot soldiers, where the front and second rank men stand with presented spears, the third rank having theirs erect, ready to be used should the enemy burst through the foremost ranks. On several stones we have the representation of a bard playing on a harp, and on several others an encounter betwixt men and animals. In three cases a man is represented tearing open the jaws of a creature like a wolf or lion.

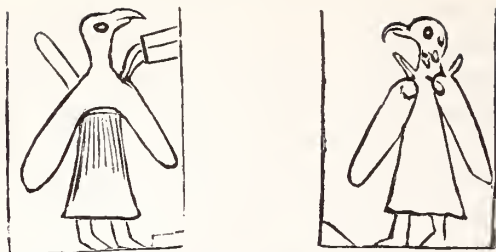
By far the most interesting sculpture I have had the fortune to examine—Suenos' pillar I have never seen—is that on the St. Andrew's stone coffin, the character of which I was the first to point out. I had the pieces, which were in the act of being carried away piecemeal, collected and arranged together, and got a cast in plaster made of the whole in 1839, for the County Museum in Cupar, then under my charge: a drawing of the principal tablet, furnished by me from an excellent sketch by the Rev. Mr. Lyon, is published in the Pictorial History of England. You will find a drawing of it in the MS. volume, with a bad lithograph in the Bombay Transactions. At the one end is represented a man in rich flowing garments, and with a full-bottomed wig, showing a rich belt, and ornamented sword sheath, tearing open the jaws of a lion—the character of the animal is clearly brought out by his short snout, his mane, and tuft at the end of his tail. The wig, the belt, and the sword sheath closely resemble those of the figures on the Assyrian marbles. Further on is a dog-like quadruped with wings, pouncing on a deer, and then a huntsman with a spear in his right hand, and a small ornamented shield in his left arm: three grey-hounds, what seems a wolf or fox, with a couple of deer, are before him. In the corner above these are some other dogs and deer, with bad representations of two monkeys. On the upper and middle portion of the stone is a man on horseback: he is richly attired, wears a full-bottomed wig, and his sword-sheath, seen from under his mantle, is richly and elaborately sculptured. On his left wrist he holds a hawk—a lion, in this case represented with considerable fidelity and spirit, has sprung on the neck of his horse, the attack being much more coolly received than such things are in modern times.

When the circumstances in which this monument was found are considered, there can remain no doubt of its very great antiquity. From the time the Cathedral of St. Andrew's was destroyed at the Reformation, the roof was, unless in so far as it supplied building stones, suffered to remain where it fell till 1826, when it was cleared away down to the floor. In 1833, a grave was dug deeper than the foundations of the Cathedral itself, six or eight feet lower than the floor, and here the stone coffin was found, in separate pieces, and not as if remaining where it had been originally placed—the richness of the sculpture clearly indicating that it was meant to be a Sarcophagus for exhibition above ground.

We are thus at once carried back to the Twelfth Century at latest, an age to which it could not have belonged, Scotland from this time back, so far as history extends, being in a state of the utmost barbarism. Yet here we have a series of representations most obviously Oriental—the elaborately curled wig and massy sword-sheath of Old Assyria—the lion and the monkey of tropical climates! How came they to be represented on a Scottish monument at all?

On many of the Runic stones, again, there is the figure of a strange flapping-eared, long-snouted animal, which I have no doubt represents an elephant: it is not at all like the animal itself, it is true, though it is like no other in creation, but it very closely resembles the figures of it I find in the Bombay Bazar.

You will find on the Aberlemno stone two winged figures, and two others on the Essie stone, one of these being defaced so as not to show the bird's head in the lithographs. If you will turn to my sketch-book you will find a drawing, made about twenty-five years ago, when the stone was more entire than when Mr. Chalmers saw it, in which one of these is represented as with a human figure, with an eagle's wings, head and beak—it might in fact pass for a rude copy of one of Mr. Layard's Assyrian drawings, as might the other winged figures just referred to, for some of his other drawings. Surely coincidences such as these can neither be fanciful nor accidental.



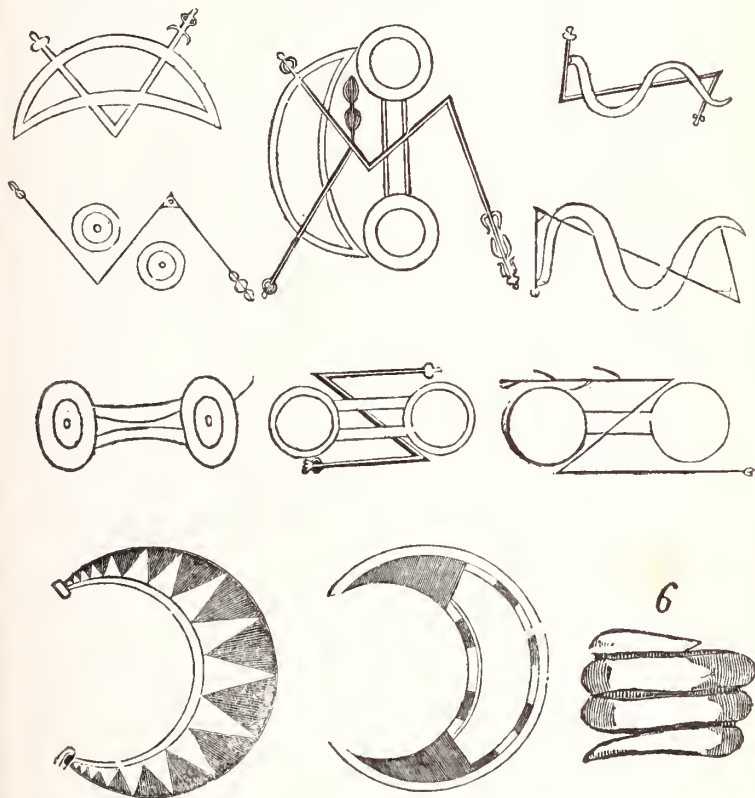
SPHINXES ON THE STONE CROSS AT ESSIE—FORFARSHIRE.



ASSYRIAN SPHINX—LAYARD.

That the whole of the Ruuic stones known by this name to antiquaries are of the same class, belong to the same age, and refer to

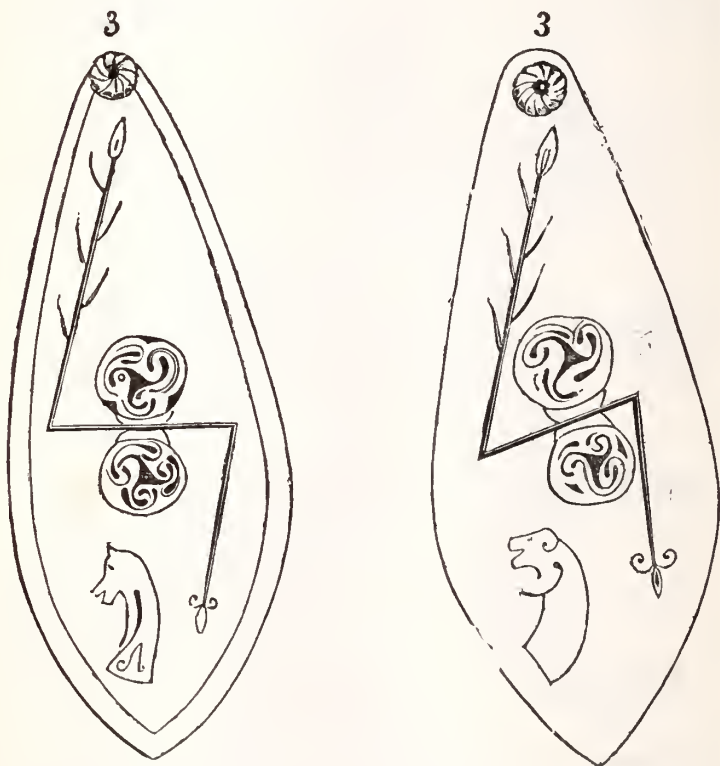
kindred events is proved on much more direct evidence than that of mere general resemblance, striking as this is : there are certain most remarkable symbols, of which the following are specimens, the meanings of which have never been attempted to be explained, that are common to one or more, if not nearly all the stones :—

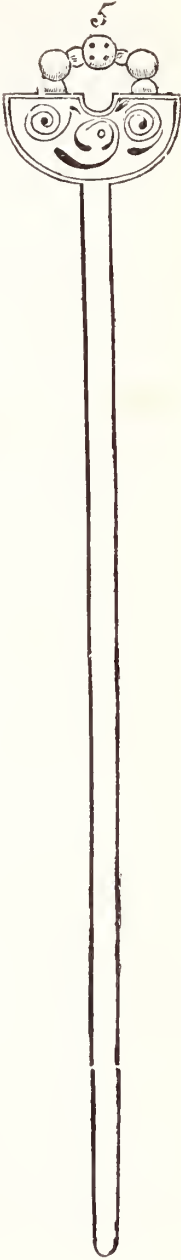
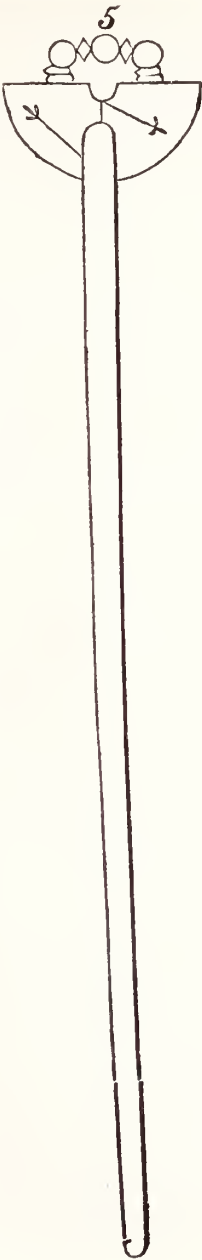


The first of these is a crescent or cunette, found, however, more or less richly ornamented, and which is sometimes represented by itself ; sometimes it is cut by the second symbol in the series, a zig-zag, with sceptre-heads at either extremity. This again, is often blazoned on with a couple of circles of equal size, connected together by two bars ; sometimes it is intertwined by a curved snake, but it is always in its own leading features the same. The third symbol is a pair of cuts

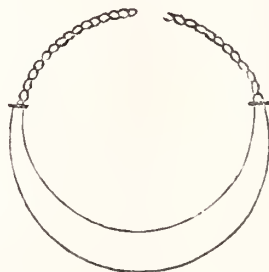
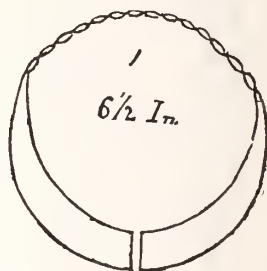
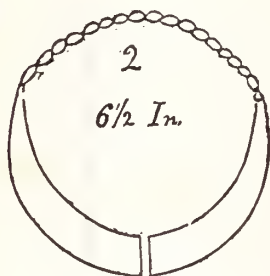
over each other, of unequal size, and there are various other symbolical figures frequently, though not uniformly, met with.

The conclusion of Mr. Chalmers' collection contains drawings of a set of pieces of silver armour, found in a Tumulus or Lou called Norres Lou in the south of Fife, of which the following representations will give you an idea of the principal parts :—





Mr. Chalmers reprints an account of the selections prepared by me sometime after its discovery, though but little could be learnt regarding it: the absurd law of treasure trove had hurried the bulk of it to the melting pot before being examined by any competent authority. The fragments remaining are two collars, in shape, size and aspect perfectly identical with those now worn by children in this part of India,



excepting that they open in front instead of behind. Alter this, and a merchant finding them in the bazar would swear they were of Bombay manufacture: a snake-shaped finger ring, very similar to those now worn by natives, two beautifully worked bodkins, and the plates, seemed to have been portions of a shirt of scale mail. On three of these you will find engraved the most conspicuous of the symbols sculptured on nearly all the Runic stones!

The frequency of the occurrence of Oriental figures is reason enough for assuming a connection betwixt these singular monuments and the

East, of what nature or amount cannot be determined—the cross gives them the only claim to an origin within the Christian æra, and then this is destroyed by the absence of all the usual crucifixion peculiarities of the symbol, as used by Christians, while the embellishment of the cross was frequently to be met with before the introduction of Christianity.

It is quite clear, from the conflicts betwixt the earliest historians, quoted by Mr. Chalmers, that by the Fourteenth Century, tradition itself was silent regarding them, and that the stories, such as the stones themselves suggested, were manufactured, accepted, and circulated to suit the fancy or the occasion, and the other fact of their being found as building stones in our very oldest edifices shows them to have fallen into neglect still earlier than this. Yet it is impossible to suppose that in these rude and remote ages so large a number of monuments so elaborate could have come into existence without some strong special reason, widely recognised, and of the most powerful influence amongst the people.

And this once more carries us deep into the recesses of the dark ages, extending back far beyond the Roman Conquest, during which a barbarity prevailed over the western parts of Europe, barren alike in tradition, literature, monuments and architecture, and sends us to seek for the origin of our sculpture to periods long antecedent to these, when the Cromleche and the rocking-stone, the unhewn pillar, the rude block and shapeless cairn, were all that were aspired after for religious or monumental purposes—as far back beyond the ages of those we call the aborigines of Britain, as the Pyramids and sculptured stones of Yutacan, precede the days of the red men, Cortez found peopling America.

On Dust Whirlwinds and Cyclones. By P. F. H. BADDELY, Esq.
M.D. ; B. Art^y. Lahore.

“ Who holds the furious storms in straighten’d reins,
And bids fierce Whirlwinds wheel his rapid car ?”

YOUNG.

During February and March, 1851, while engaged in the investigation of Dust Whirlwinds, I twice witnessed a curious fact, which seems to throw considerable light upon the complicated phenomena of Storms.

In following up on horseback a dust whirlwind, I observed that as it passed various objects in its progress, such as tents, horses, &c. it gradually diminished in size, till at length instead of a whirling circle of 5 or 6 feet in diameter, composed of several rotating cones or spirals of dust, Plate 2, it terminated in a single cone, the apex of which in contact with the earth, rotated briskly like a top, from left to right, as did the whirling circle before, of which this was a portion.

From the cone of dust, a long ribband-like band about 12 inches in diameter, of equal dimensions throughout, as far as the eye could reach, was seen to extend into the atmosphere, and from the circumstance of its sides presenting a greater opacity than the central portion, I concluded it was cylindrical.

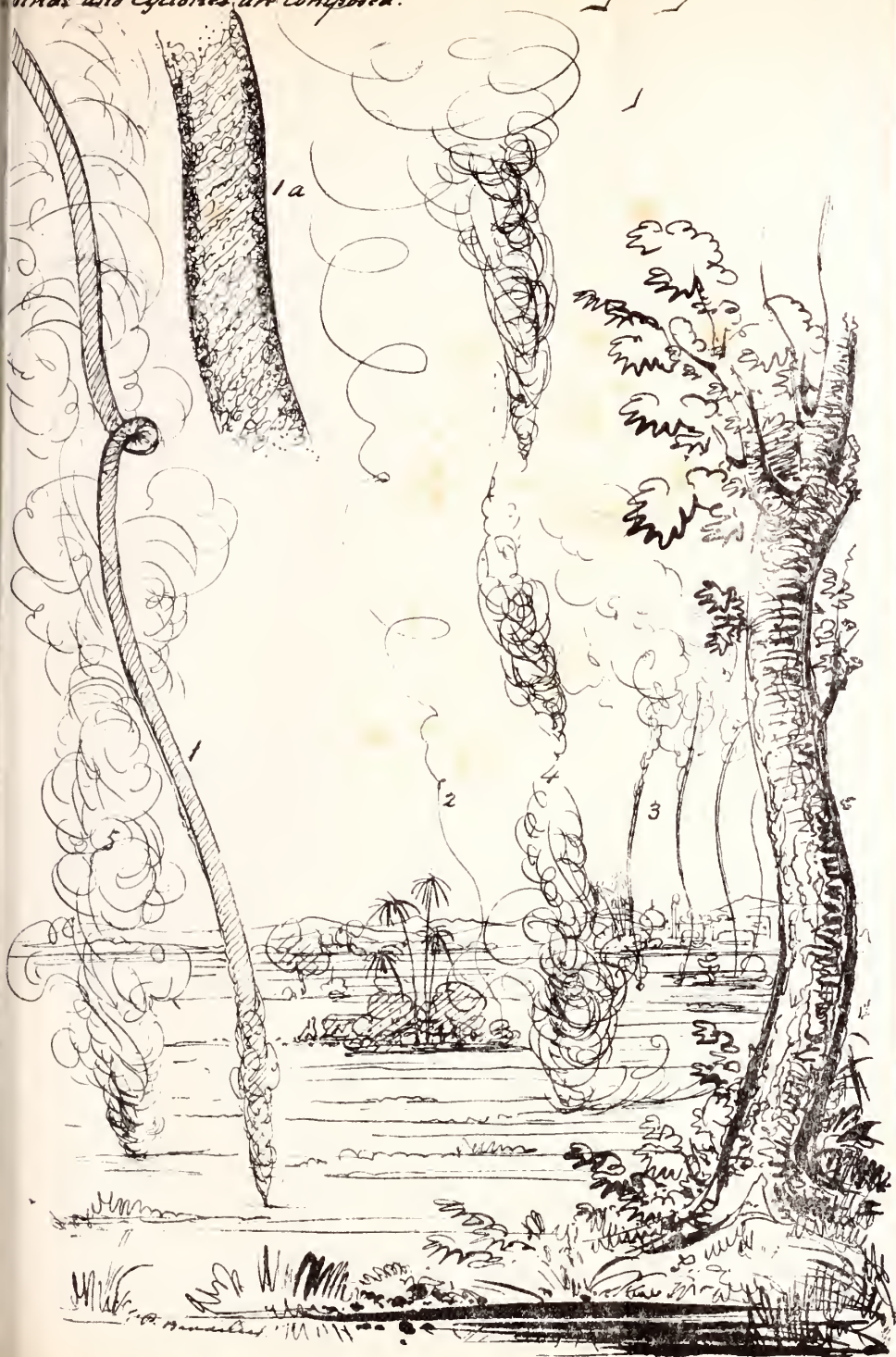
This band was rendered faintly visible by the dust it had whirled up, which by the light of the sun that shone through it, exhibited a kind of vermicular spiral motion. At about 50 or 60 feet above the surface of the ground, the band formed a distinct coil, as represented in the plate, still preserving its cylindrical appearance, and extending upwards and forwards in advance of the whirling cone, Plate I, Fig. 1.

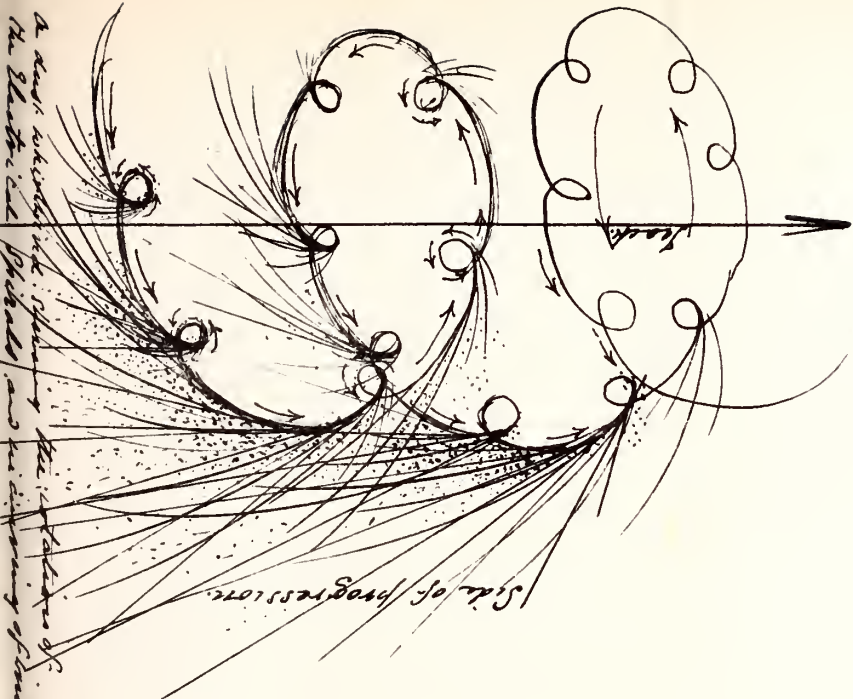
Suddenly the Cone, which had the last continued to rotate, vanished from the earth, and the whole band then slowly receded upwards and onwards out of sight.

The common dust whirlwind, is I conceive, a miniature representation of a Cyclone, and this band seems to indicate the ultimate thread of the electrical spiral mass of which the whirlwinds are composed.

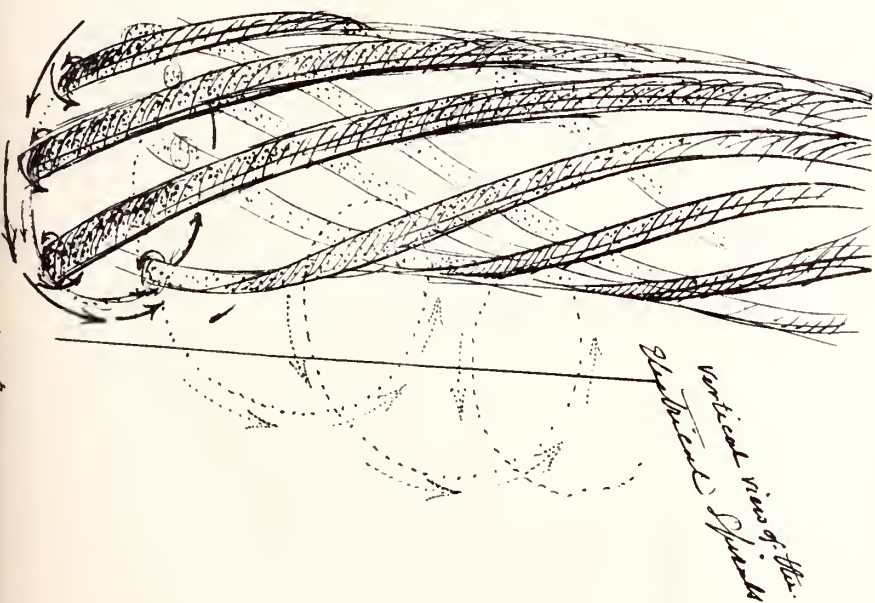
Whirlwinds large and small, appear to be made up of a number of

trical thread of which the
winds and cyclones are composed.

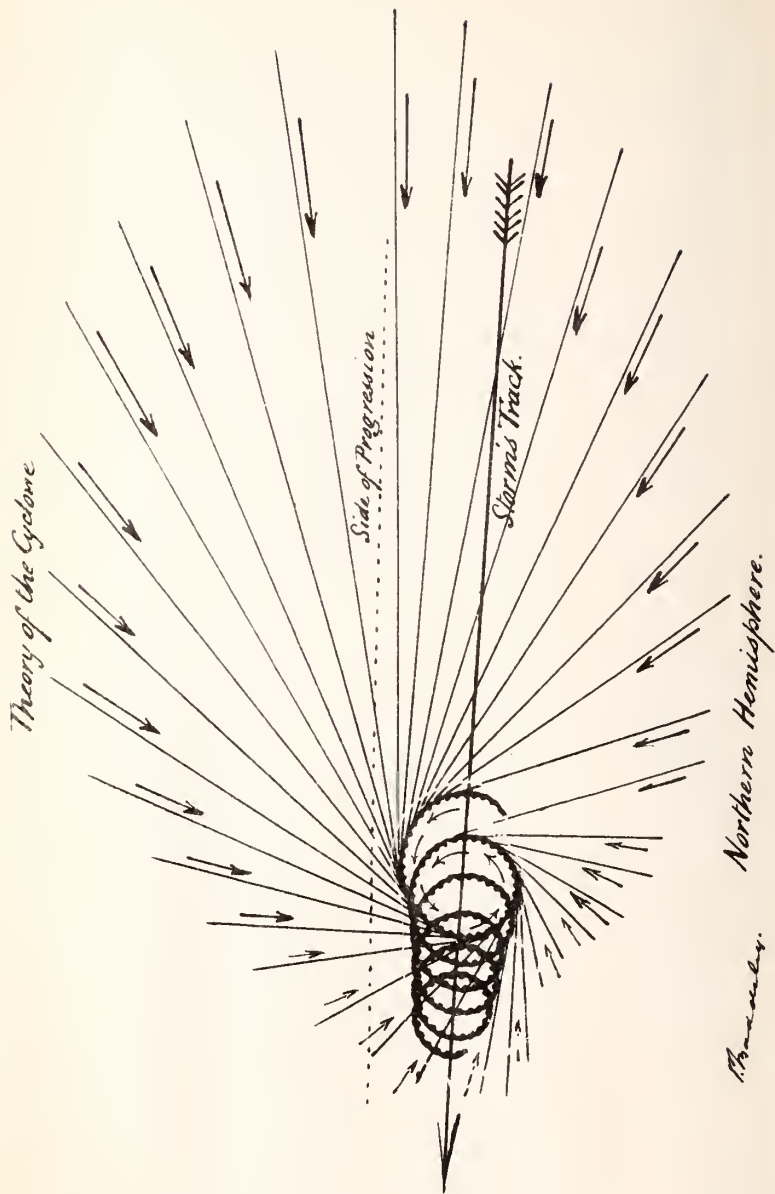




A deep subcutaneous staining of the plastic shield and its disintegration of the shield.



Baron



these electrical spiral threads, placed singly or in fasciculi, each and all rotating independently as the whirlwind circles, onwards in its course ; and the incurving of the winds oftentimes distinctly observable in them when the whirlwind passes over a light dry soil, is occasioned by the rotation of the electrical threads, Plate 2.

The rotation of the spirals may now enable us to comprehend a singular appearance sometimes seen in an approaching dust storm.

A broad wall of dust is observed rapidly advancing, apparently composed of a number of large vertical columns of dust, rolling onwards, each preserving its respective position in the moving mass ; and each column having a whirling motion of its own.

This appearance is doubtless occasioned by the advance of a large body of electrical matter in the form of spirals, rotating as they advance ; and this may actually represent the body of a Cyclone.

The gusts that occur from time to time during a storm of this description, may be easily accounted for by supposing the passage of a succession of these rotating electrical columns ; and it has been repeatedly proved to my satisfaction, that during the squalls that mark these storms, the electrical tension is at its maximum ; for the electric fluid then streams most furiously down the insulated wire, exactly in accordance with the violence of the wind or gust at the time.

I conceive therefore that the motive power in the Cyclone, may be a zone of electrical matter, composed of innumerable spiral columns of all sizes, single and compound, placed at intervals, rotating with the body of the storm ; first from above downwards ; secondly on meeting the earth's surface, whirling their elliptical or Cycloidal courses, each preserving its respective position in the moving mass. Outside this whirling zone of electrical matter, centripetal winds in all probability exist, blowing from a circumference more or less extended, to the edge all round, forming with it centripetal tangents, Plate 3.

These straight-lined Centripetal winds blow, I should think, with more regularity, greater force and longer continuance, on the side of the storm's progression ; as that side will have a double set of forces acting upon it,—the progressive and the rotatory.

This side, may easily be determined when the track of the storm is known, by attending to what seems the established law of the rotation of the storms according to the Hemispheres—that those to the North

of the equator, rotate from right to left ☺ and those to the South of the equator from left to right ☻.

Having therefore determined the probable track of a rotatory storm—face the point to which the storm is supposed to be travelling—the stronger centripetal winds will then be found blowing on the right hand in the Northern Hemisphere—and on the left hand in the Southern.

The stronger centripetal winds on the side of progression, must for the reason above-stated, blow more or less in the direction of the storm's track ; while those on the opposite side of the whirling ellipse, will be opposite to it, and much more limited in extent.

The Diagram of Pl. 3 indicates more plainly what I have attempted to explain.

I have there described the winds surrounding the electrical zone as strait-lined winds, blowing from a circumference to a centre, as centripetal tangents ; which centre is the revolving ellipse or zone, forming the body of the Cyclone.

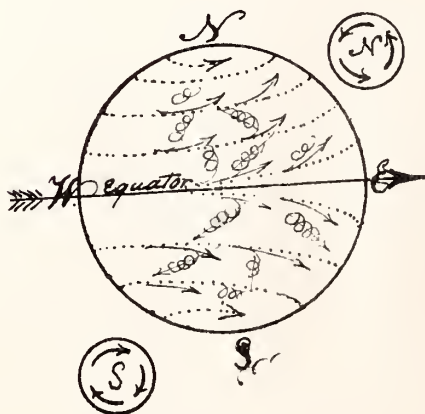
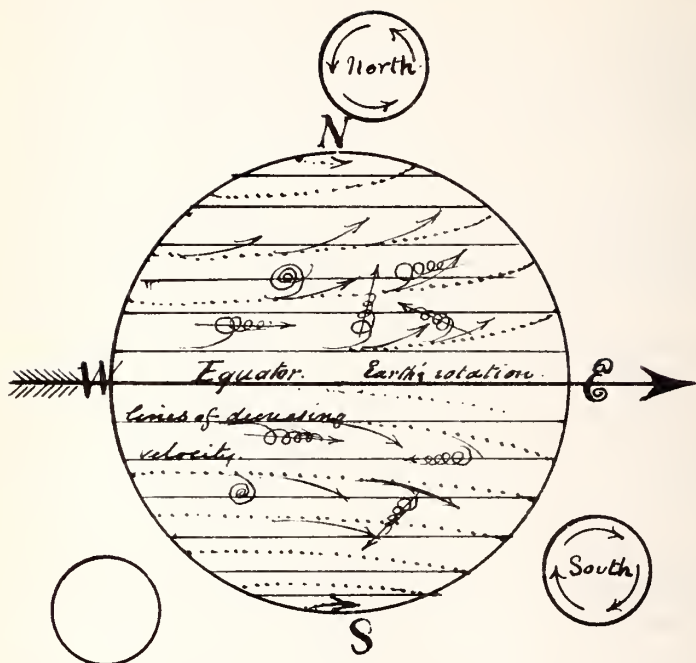
The mass of electrical matter of which the body of the Cyclone is composed, descends I presume, as in the case of the small whirlwinds from the sky to the earth, in the form of a spiral, working downwards ; and its subsequent movements and the track, may depend in a great measure on causes connected with the earth's rotation, and upon the prevailing surface winds.

To illustrate this idea of the progression and rotation of a Cyclone in a definite course, spin a tee-totum provided with a glass tube drawn out to a fine point, containing ink, on paper laid perfectly flat.

When the tee-totum is what boys call asleep, give it a slight puff with the breath, horizontally ; this will cause an obliquity of the axis of rotation, and at once induce a revolving motion, and also a progressive one in some particular direction ; and the toy will be found to describe exactly the peculiar motions of the Cyclone, both rotatory and progressive, and by spinning it one way or the other, familiar illustrations may be afforded of the manner in which a Rotatory storm works in the Northern and Southern Hemispheres.

An explanation of the law of the rotations may be attempted thus.—

The rapidity of the earth's diurnal rotation from west to east,



gradually declines from the equator to the poles—on the equator alone, it will be equable ; but on the either side of it, North and South, the force of rotation will constantly diminish towards the poles.

Matter floating in the atmosphere will doubtless be influenced by this rotation of the earth, and have communicated to it, a tendency to deviate from a direct parallel line with the equator :—

The line so formed will, if traced, form an ascending or descending spiral towards the North and South poles, as described in the dotted lines of Plate 4.

For the Northern Hemisphere this line will form an upward spiral from right to left—or against the hands of a watch—and in the Southern Hemisphere, the spiral will move in a contrary way, viz. from left to right or with the hands of a watch—coinciding with the known evolutions of these storms on either side of the equator.

This then may exhibit something of the element we require in order to give these Cyclones their respective rotatory motions.

But their impetus, and direction when in contact with the earth's surface, will perhaps depend on other causes, the operation of which, though slight, may be sufficient to determine the size of their revolutions and the direction of their track—Plate 4 is intended to illustrate this idea.

The arrow represents the Equator, and the earth's diurnal rotation, from west to east. The dotted lines, mark the tendency of bodies floating in the atmosphere to be drawn towards the poles.

The spirals are Cyclones ; and the curved arrows with dotted lines, the element that gives them tendency to revolve either to right or left.

Additional Notes.

More extended observations on dust whirlwinds and other meteorological phenomena, confirm me in the belief that all kinds of storms, especially those of a distinct rotatory character, are occasioned by electrical Spirals, of which mention was made in my former paper.

What the exact nature of those spirals is, I cannot say—possibly some modification of matter not yet fully noticed ; and they may be identical with the electro-magnetic cylindrical-beams supposed by the late Dr. Dalton to compose the Aurora.—Vide Note 2.

As they are transparent, their existencce can only be inferred by the effect produced on surrounding matter, as in the case of the water

spout and the dust whirlwind ; which are familiar instances of their effects when passing over water or a dry sandy soil : but during a storm, when the whole atmosphere is filled with dust, or aqueous vapour, no such marked indication of their presence, is perceptible.

On such occasions however, the peculiar motions of a vane, oscillating as it constantly does from 3 to 4 points, or more, during the passing gusts, marks plainly enough the action of these spirals.

This peculiar motion of a vane during a storm, may perhaps be accounted for, by supposing that the electrical whirls or the eddies caused by them in passing, strike it on one side, and twist it round to a certain distance ; when it is immediately brought back to its original position in the direction of the storm's course, by winds that closely follow after, excited by the passage of the electrical whirl through the air, setting it in motion, and causing winds, blowing with more or less obliquity to a certain distance on either side of the track of the spiral, just as we observe still water is affected by a solid body drawn through it.

This phenomenon I have invariably found to accompany the passage of dust whirlwinds over a vane, and as it is presumed the active portion of rotatory storms, (and probably of all storms,) is composed of a mass of swiftly moving spirals of a similar nature, the same effect on the surrounding air, observable in the small whirls, will likewise be produced on a much larger scale, in every variety of Cyclone or Tornado.

The combined action of both forces, viz. the spiral motion of the body of the storm, or electrical zone, gyrating onwards and from above downwards, and its local effect upon the air through which it passes will produce a curved progressive motion in the winds, taken as a whole, as described by Colonel Reid and Mr. Piddington—and ships caught in its vortex, may be impelled round and round with the body of the storm, as was proved long ago by the latter gentleman to have happened to the brig *Charles Heddle* in the Mauritius Hurricane of 1845.

Reflecting on the spiral working of the storm throughout, it is easy to conceive why the central portion of it, should be so much more violent, than at the outer margin, and why the incurving winds and powerful vortices, so marked thereabouts, render the condition of a

ship so situated, perilous in the extreme, especially, if once involved in the fatal calm centre.

At sea, during such storm, and near its centre, an adequate explanation is now afforded to account for the horribly confused pyramidal masses of raging waters driven by the fierce impetnosity of the winds one against the other, shooting up into the sky, and how on land, such a whirlwind passing over a country, may prove a desolating hurricane, sweeping it literally with the besom of destruction.

In addition to the curved motion of the winds, taken as a whole, there must be, what I have observed in the small whirlwinds, straight-lined winds, blowing around and towards the electrical zone forming the body of the storm; the extent and force of which will probably depend upon the amount or intensity of the electrical matter evolved, and also upon the rapidity of the rotatory and progressive motions, liable therefore to endless variety.

The active portion of all rotatory storms seems to be a stratum of electro-magnetic spirals diverted downwards to the earth's surface from the higher regions of the atmosphere, far above the highest clouds; though from the sensible effects being chiefly confined to a few thousand feet above ground the popular idea is, that the storm itself is also limited to that region, and that it does not extend beyond the cumulo-stratus, or the storm cloud.

If the former supposition be correct, there must be, I think, wherever such a storm is raging, many winds blowing in opposite directions, overlying each other, like steps of a circular staircase, excited by the self-same cause that sets in motion the air below near the earth's surface, though not with an equal degree of force in consequence of the more rarified state of the atmosphere in the higher regions.

The opposite movements of the clouds during a storm seem to indicate, that these varied currents in the higher regions do exist, and as far as my limited experience extends, they do so with such uniformity, that I am inclined to believe that in most, if not in all storms, these opposite movements in the different cloud strata are present, though from the great height of the cirrus cloud any motion affecting it is detected with difficulty, requiring a strong and practical eye to do so, even when marked upon a clear sky without intervening clouds: the difficulty however is greatly enhanced, when during a storm, from the

clouded state of the atmosphere, occasional glimpses only of the upper cloud strata can be caught; and the difficulty becomes an impossibility at sea, from the motion of the vessel: accordingly, these distant clouds, appear under such circumstances, to be stationary, and are often so reported.

NOTES.

1.—The following account by Captain Gastrell of the effects produced upon an Electro-magnetic battery in action during the passage of a Dust-Storm, will be read with interest.

“I have the pleasure to send you a Memo. of the phenomenon I mentioned to you as observed by me at Cawnpore, with the Electro-magnetic machine during the passage of a Dust-Storm.

“In the hot weather of 1847, I was experimenting one day at about 11 A. M. with an Electro-magnetic machine. It was of small size,—the wire coil about 200 yards in length and fine,—the battery I was using to impel the magnet in the break cup, was one of 12 or 16 pairs of zinc and copper plates; each plate about 4 inches square, and was charged with dilute sulphuric acid and water. Shortly after the battery and magnet were in action, and sparks passing freely, a dust-storm came up from the West, passing directly over the house I was in towards the N. E. or E. N. E.

“On its approach, I observed the action of the magnet decrease gradually, until, in the dead lull or calm that usually precedes such storms, it ceased revolving.

“The action of the battery during the same period increased in intensity and apparently in proportion to the decreased revolutions of the magnet.

“It was at its maximum of intensity about the time the centre of the storm was passing, and, supposing the stoppage of the magnet might be owing to too much energy in the battery, I disconnected the coil, and placed it in connection with a single cell battery with platina plates.

“This I charged with a solution of sulphuric acid and water, decreasing the strength of the solution with more water from time to time, but with no effect on the magnet. I then emptied the cell, and charged it with a solution of common salt and water, with the same want of success: I then removed the single cell battery, and re-connected the coil with the 12 plate battery, and left it.

“No sooner had the storm of dust passed, and light rain began to

fall, than the action of the battery became quieter, until the hissing sound ceased, and the magnet again began to revolve: sparks of course passed, and shortly the magnet revolved as quickly as it did previous to the storm.

“I mentioned the circumstance to my cousin Colonel Wilson, astronomer at Lucknow, and asked him if he had ever seen a similar circumstance mentioned; or, if he had ever observed his magnets in the magnetic observatory at Lucknow in any way affected during the passage of a dust storm. He replied he had not, and could not account for it in any way. Query. Is there any point in the track of these dust-storms, (which are undoubtedly of the nature of Cyclones) in which, if a magnet happened to be, it would lose its polarity for the time, ceasing to be a magnet?

“If so, the cause would be clear. This did not strike me at the time, or I might have easily tested it.

“I recollect another phenomenon observed in one of these storms. It occurred during the march of my Regiment up-country to join the army of the Punjaub. We had left our ground long before day-light, and were caught in a dust-storm, followed by very heavy rain and vivid lightning; when the rain fell, the muzzles of the men’s muskets, and the peaks of the officers’ caps, were seen tipped with that well known electrical appearance, called St. Elmo’s light: and this appearance continued for some minutes, a quarter of an hour perhaps. I am not quite sure now, whether I ought not to say, the *tips of the Bayonets*, and not, the muzzles; as we were marching with treasure, and, I think, Bayonets fixed.”

2.—In Noad’s Lectures on Electricity, page 337, the following passage occurs.

“Dr. Dalton, in a work published in 1793, has advanced several ingenious hypothetical views respecting the cause of the Aurora, and its magnetic influence. He says,

“‘We are under the necessity of considering the *beams* of the *Aurora borealis* of a *ferruginous* nature, because nothing else is known to be magnetic; and consequently that there exists in the higher region of the atmosphere, an electric fluid partaking of the properties of iron, or rather of *magnetic steel*; and that this fluid, doubtless from its magnetic property, assumes the form of cylindrical beams.’ ”

Nooks and Corners of Bengal.—No. I. The Tomb of MEER MUDDAN KHAN, Commander-in-Chief of the NUWAB SOORAJ-ODD-DOWLAH's Army at the Battle of Plassy.

The traveller in marching from Kishnuggur to Berhampore by the Darjeeling Road, after leaving the quiet little thatched hut constituting the Post Office at Miria or Merai, enters upon the open and level-plains, leading to Plassy. Little beyond proud reminiscences of the glorious day on which Clive added the richest jewel to the crown of Britain needs detain him on his journey. One huge and venerable mango tree alone remains, of the grove, under whose shelter, the small band of British Troops encamped on the memorable night, preceding the Battle. Stewart in his History of Bengal, says, "At sunset, the Troops got under arms, and after a fatiguing march, arrived at one o'clock in the morning at Plassy, and immediately took possession of a mango grove 800 yards in length and 300 in breadth."

The encroachments of the River Bhagirutti and the hatchet of the wood-cutter have gradually reduced this once extensive grove to the single tree now standing, to point out the site of the contested field of the 23rd June, 1757! The villagers appear to regard the old tree with much veneration, and offer under its shade, little clay images of horses to their gooroo or saint: these little clay horses, in great number, cover the ground, mixed with the green and brushwood.

Cannon shot and fragments of rusty arms are occasionally turned up by the plough and carried off to the neighbouring Indigo Factories, where they meet with a ready sale.

Continuing his steps towards the village of Locknathpore, the traveller may remark a single tree on the left of the road, a few hundred yards distant, surrounded by low underwood. This is Juggut Roy's tree and the last remains of his garden. Juggut Roy was the owner of Plassy grove, who removed his residence, in consequence of the encroachments of the river, to this spot. The house is no longer standing; loose bricks overgrown with wild flowers and degenerated garden creepers and plants, shadowed by the lonely tree, mark the site of the grounds; the plough is daily adding even these to the surrounding level monotony of the increasing cultivation.

At a distance of about a mile and a half north from Locknathpore,

is the village of Mungunpárá, situated on the banks of the river and buried in trees. To the northern end of this village rises a tall Fan Palm, visible far away along the dreary road between Miria and Dáoudpore. This Palm indicates the Durgâh of Faqeer Shah Fareed Shukr Gunge,* a Durvesh of much note and sanctity who travelled throughout the continent of India, marking his various resting places, by the erection of holy shrines of worship. The Durvesh died and was buried in the Punjab, where his memory is held in much esteem.

Ferishtah, who wrote his history, the Tarikh-i-Ferishta, about the year A. D. 1593, mentions that in the year 472 H. (A. D. 1055,) the Sultan Ibrahim marched in person to India and conquered several new cities; amongst them, Ajudhan, now called Puttun Sheik Fureed Shukr Gunge, which is in all probability the burial place of the Durvesh. It lies between the rivers Jhelum and Indus, and is supposed by Wilford to be the same as the Hud of the Book of Esther. On the Allahabad Lát or Column it is mentioned under the name of *Yaudheya* and occurs also on many Bactro-Pehlevi coins.†

The Durgâh at Mungunpárá is a simple square brick building on a raised *chubootra* or terrace, surmounted by a bell-shaped cupola, all brightly white-washed and cleanly swept, and surrounded by trees, within an enclosure having entrances to the east and west.

On the western side of the building, uncared for and neglected, a few feet above the level of the damp green earth and shaded by over-hanging branches, stands a small unpretending brick grave, showing the last resting place of a brave and faithful soldier, Meer Muddan Khan, Commander-in-chief of the army of the Nuwab Sooraj-ood-Dowlah at the Battle of Plassy, who was killed by a cannon shot which carried off both legs, about 12 o'clock on the day of action.

I can find no mention of Meer Muddan earlier than the year 1756,‡ when he appears to have been selected, although a man of mean origin,

* His name was according to Dárá-Shikóh's *Safynat alawliyyá*, Mas'úd 'azyzaldyn b. Mohmúd. He was born at Khólwál كهولوال which is not far from Multán and was a pupil of Qotbaldyn Bakhtyár. The name of Ganjyshakr, i. e. treasury of Sugar, was given to him by his spiritual guide because one day, having fasted a whole week, he fainted in the street and some mud which had fallen on his mouth, during the swoon was miraculously converted into sugar. He died at an age of 95 years in A. H. 664, (A. D. 1265, 17th Oct.) He was buried at a place between Lahore and Multán.—ED.

† Journal A. S. of Bengal, Vol. VI. p. 973.

‡ Stewart's Hist. Beng. p. 309.

by Sooraj-ood-Dowlah, from amongst the companions of his pleasures for the important post of Commander-in-chief of his forces ; to the exclusion and supercession of the old officers under the late government of Ali Verdi Khan.

There can be little doubt but that Meer Muddan commanded in all the eventful operations, which marked the short reign of the vicious and depraved Nuwab, so much despised for his crimes and his cowardice. Orme* describes Meer Muddan as one of the best and most faithful of the Nuwab's Generals.

Stewart in his account of the Battle of Plassy, when describing the suspicions of Clive as to the intentions of the traitor Meer Jaffier, states that the agent, one Ameer Beg, on being sent for and questioned as to what troops were opposed to the English, replied, those under Meer Muddan and Rájá Mohun Lall, consisting of 5000 Horse and 7000 Foot.

Sooraj-ood-Dowlah with his accustomed cowardice remained out of danger in his tent, which must have been pitched near the village of Mungunpara, distant a little more than a mile north of the field of battle. There he sat, listening to the continual flatteries of his courtiers, who were assuring him of victory, until the mutilated body of his faithful General was carried into his presence. The dying man lived but to utter a few words expressive of his own loyalty and the want of it in others, and died at the feet of his unworthy master.

The sketch† heading this short notice of one of the interesting "Nooks and Corners" of Bengal was taken during the cold weather of 1851-52. The modest brick grave of the brave soldier is fast falling to decay, whilst at Khooshbagh near Moorshedabad the tomb of the vicious and cowardly Nuwab Sooraj-ood-Dowlah, renowned for his atrocities, and whose memory is held in universal detestation, in connection with the fearful tragedy of the "*Black-hole*" of Calcutta, is repaired and kept up at the expense of Government, with a most liberal establishment of Moollahs, Gardeners, Masons, &c. &c.!

Would not a few Rupees be sanctioned to save this little spot, sacred in Indian history, from speedily becoming a ruin and a mass of rubbish?‡

* Orme's Hist. of Hindostan, Vol. 2, page 175.

† It was not found feasible to print the sketch.—ED.

‡ Since the above was written the tomb has been repaired at the expense of Henry Torrens, Esq. Agent to the Governor General, at Moorshedabad.

Catalogue of plants found in the Banda district, 1847—49, by M. P. EDGEWORTH, Esq. C. S.
(Continued from page 48.)

No.	Genus.	Species.	Native Names.	Remarks.
	..	Sub avicularia Dryan- dri.	..	Dried up mud.
	Rumex.	Wallichiana.	..	Bed of Ken.
	LAURINEÆ.	..	..	Bushy places.
	Cassytha.	..	..	Gardens.
	EUPHORBIACEÆ.	Officialis.	..	Fields and rocks, &c.
	Emblica.	Simplex.	..	Fields.
550	Phyllanthus.	Obovatus.	..	Cultivated ground.
	..	Niruri.	..	Rocky thickets.
	..	Vitis idæa.	..	Ditto Kurtul.
	..	..	..	Banks of Cane.
555	Melanthesa.	..	..	Gardens.
	Briedelia.	..	..	Jungles.
	Crozaphora.	Plicata.	..	Abundant,—black soil.
	..	Tinctoria.	..	Ditto.
560	Baliospermum.	Indicum.	..	Abundant.
	Ricinus.	Communis.	..	Cultivated.
	Acalypha.	..	..	Rocks, Banda.
	Euphorbium.	Neriifolium.	..	Gardens.
	..	..	..	Black soil.
565	..	Hirtum.	..	Abundant.

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
570	..	Glaucum.	..	Abundant.
	..	(Villose.)	..	Banks of Cane.
	..	Chamesyee.	..	Common.
	..	..	..	Ditto.
	..	Dracunculoides.	..	Fields.
	..	..	..	Ditto.
	..	..	..	Banks of ditches, &c.
575	Rottlera.	Tinctoria.	Rori.	Jungles.
	PIPERACEÆ.	Betel.	Pán.	Cultivated near Seonda.
	Piper.	..	..	Damp rocks—abundant, &c.
	ULMACEÆ.	Integrifolia.	Chilla.	Abundant, cultivated and wild.
580	Ulmus.	Colebrookii.	Khusam.	Kuliangarh hills.
	JUGLANDÆ.	Lakoocha.	Barhal.	Gardens.
	Engelhaertia.	Integrifolia.	Kathal.	In a garden at Chitarkot.
	ARTOCARPEÆ.	Indica.	Bar.	Passim.
580	Artocarpus.	Laccifera?	Ditto.	Kaliangarh hills.
	Ficus.	Tomentosa.	Ditto.	Granite rocks Banda.

585	.. Religiosa. Infectoria. Ampelos. Oppositifolia. Heterophylla. Carica. Aspera. Hispidula.	.. Gular. Pipal. Pákar.	.. Cultivated. Passim. Rare (Chytára.) Rocky hills—Chitarkot. Waterfalls, &c. Gurhrampur. Bed of Keu—Ramgarh. Gardens. Not uncommon. Very large at Nehi. Sides of streams—Kulhunúán.
590	Epicarpurus. Pezolzoö. SALICINÆ. Salix.		
	.. An Myricaceous. An Rhus? An Pterospermum. 595 Byttneriaceæ? A climbing plant (woody.) Strychnos? A climbing shrub— shining acuminate lanceolated dark green leaves, young leaves rusty.	Bet. .. Rohin. Kapsia. Bhoti. Prit Bhanjau. Kápar.	Ken at Ramgarh. .. Ditto. Kaliangarh jungles. Ibid. Ditto. Ditto. Ditto.
	ENDOGENÆ. PALMÆ. Phoenix. 600 Borassus.	.. Khajur. Tar.	Rocks at Dasratkund, P. Chibun. Rare, cultivated. Very rare.

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
	PANDANEÆ.			
	Pandanus.	Odoratissimus.	Keora.	Rare,—gardens.
	AROIDEÆ.			
	Colocasia.	Nymphœifolia.	..	Near Reonetri.
	..	Antiquorum.	Arwi.	Cultivated,—gardens.
	LEMNACEÆ.			
	Lemna.	Gibba ?	..	Ponds.
	NAIADACEÆ.			
605	Aponogeton.	Monostachys.	..	Rare (ponds) Gureb.
	Zamchellia.	Palustris.	..	Ditto.
	MUSACEÆ.			
	Musa.	Sapientum.	Kela.	Gardens.
	CANNACEÆ.			
	Canna.	Indica.	..	Ditto.
	ZINGIBERACEÆ.			
	Zingiber.	Officinale.	Adrak.	Cultivated,—rare.
610	Z.	Capitatum.	..	Jungles (Rasaure.)
	Curcuma.	Longa.	Haldi.	Cultivated,—rare.
	ORCHIDEÆ.			
	Zeuxine.	Sulcata.	..	Turf—banks of brooks.
	Dendrobium.	Sp.	..	Only seen in point Kaliangarh jungles, &c.—Gurhampur.

AMARYLLIDÆÆ.	Kanthala.	..	Gardens.
Agave.	Zeylanicum.	..	Ib.
615 Pancratium.	Verecundum.	..	Ditto.
..	Zeylanicum.	..	Gardens.
..	Toxicarium ?	..	Marshes—I have not seen this flower.
620 Narcissus.	Tazetta ?	..	Gardens.
IRIDÆÆ.	Perrica.	..	Gardens.
Iris.	Chinensis.	..	Ditto.
Pardanthus.	Octandra.	..	Ponds.
Blyxa.	Spiralis.	..	Ditto.
625 Vallisneria.	Albemifolia.	..	Ditto.
Hydrilla.	Verticellata.	Jhanghi.	Ditto.
DIOSCOREÆÆ.	Alata.	Ratalú.	Cultivated.
Dioscorea.	Sagittata.	..	Rocks.
..	Pentaphylla.	..	Jungles.
LILIACÆÆ.	Tuberosa.	..	Gardens.
630 Polyanthes.	Ludica.	Ghikonwar.	Cultivated.
Aloe.	Gloriosa.	..	Gardens.
Yucca.	Sativum.	Lahsan.	Ditto.
Allium.	Cepa.	Pyaz.	Ditto.
..	Clavatus.	Pyazi.	Wild in corn fields.
635 Asphodelus.	Fulva.	Gulnargis.	Gardens.
Hemerocallis.	Officinalis.	..	Ditto.
Asparagus.	Superba.	Kúrhári.	Jungles.
Gloriosa.			

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
	JUNCACEÆ. Juncus.	Dichotomus.	..	Marshy ground.
	ALISMACEÆ. Sagittaria.	Sagittata.	..	Ponds—khundah.
640	S.	Cordata.	..	lb.
	COMMELYNACEÆ. Commelyna.	Bengalensis.	..	Rubble.
	C.	Salicifolia ?	..	Ditto.
	C.	Gelatinosa, N. S.	..	Rocks.
	Cyanotis.	Axillaris.	..	Marshy ground.
645	C.	Imbricata.	..	lb.
	Anilema.	Spiratum.	..	Waste places—dry.
	A.	Nudiflora.	..	Grassy places.
	ERIOCAULONEÆ. Eriocaulon.	Sexangulare.	..	Moist ground.
650	CYPERACEÆ. Cyperus.	Pectiniformis.	..	Sandy ground.
	..	Nivea.	..	Abundant.
	..	Aristatus.	..	Sandy ground.
	..	Hexastachyus.	..	Too abundant.
	..	Irio.	..	Rice fields, &c.
655	..	Wightii ?	..	Spring heads—Ken banks.

660	Isoplepis.	..	Venustus.	..	Wet ground.
	Scirpus.	..	Roylei.	..	Wet places.
	Malacochaete.		Barbata.	..	Sandy fields.
	Elæocharis.		Affinis.	..	Wet ground.
	HYDROCHARIDÆ.		Pectinata, Nov.	..	Edges of streams.
	GRAMINA.		Palustris.	..	Marshes.
	PANICEÆ.				
	Paspalum.				
	P.		Srobiculatum.	Kodon.	Cultivated.
	P.		Longiflorum.		Marshes.
	P.	N. S.	Biflorum.	..	Shady places.
	P.		Pedicellatum.	..	Sandy fields.
665	Helopus.		Annulatus, Nov. MS.	..	Common.
	Panicum.		Brizoides Roxb.	..	
			Flavidum.	..	Black soil,—abundant.
	P.		Colonum.	Sawank.	Poor soil.
670	P.		Concinnum.	..	Fields, &c.
	P.		Setigerum.	..	Ib.
	P.		Vestitum.	..	Rocks.
	P.		Angustatum.	..	Fields.
	P.		..	Kora.	Ib.
	P.		..	..	Ditto.
675	P.		Helopus, (Nov.)	..	Rocks.
	P.		Triflorum.	..	Cultivated.
	P.		Frumentaceum.	Sawank.	Wet places—ditches.
	P.		Hispidulum.	Jal sawank.	Hedges and thickets.
	P.		Antidotale.	..	Cultivated in gardens—rare.
680	P.		Maximum.	..	

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
	Panicum.	Paludosum.	..	Ponds.
	..	Roxburghii.	Jangli chiní.	Fields.
	..	Miliaceum.	China.	Cultivated.
	..	Miliare.	Kutki.	Cultivated in the Patha.
685	Digitaria.	Commutata.	Thakhriya.	Abundant.
	..	Royleana.	..	Sandy fields.
	..	Cruciata.	..	Fields.
	..	Appressa.	..	Fields (Sandy.)
	..	Cimicina.	..	Fields.
690	Coridochloa.	Helvola.	..	
	Setaria.	(<i>Glauca Roxb.</i>)	..	Abundant,—poor soil.
	..	Italica.	Kákún.	Cultivated.
	..	Rottleri.	..	Shady places.
695	..	(<i>Tomentosa.</i>)	..	
	..	Verticellata.	..	Ditto gardens, &c.
	Echinochloa.	Stagnina.	Nari.	Wet places.
	Orthopogon.	Burmanni.	..	Grass.
	Penicillaria.	Spicata.	Bujra.	Cultivated.
	Pennisetum.	Holcoide.	..	Rocky jungles—Gurhampur.
	..	Araneosum.	..	Ib.—Banda.
	..	Imberbe.	..	Ib.—Gurhampur.
700	Ceneterus.	Echinoides, Nov. MS.	..	Sandy moist ground.
	..	Montanus.	..	Ib.

Lappago.	Biflorus.	..	Ib.	Damp ground—edges of stream.
ANDROPOGONEÆ.	Kœnigii.	..		Near the Jumna.
Imperata.	Sara.	Sirpat-Múnj.		Passim. The curse of the country.
705 Saccharum.	Spontanæum.	Kansa.		Cultivated.
..	Officinale.	Ganna.		Banda rocks.
..	Tenue.	..		Inundated lands.
Pogonetherum.	Muricata.	Sentha.	Orai Gándr.	Cultivated.
Vitiveria.	Vulgare.	Joár.		Thickets.
710 Sorghum.	Halepense?	Barú.		Beds of rivers, among rocks.
..	Giganteum.	..		Rocks.
..	Cærulea.	..		Rocky woods.
..	Microstachys?	..		Kaliangarh.
715 ..	Aciculatus?	..		Rocks.
Andropogon.	Echinatus.	..		Poor gravelly soil, Seonda.
..	Tenellus.	..		Pastures.
..	Bladhii.	..		Thickets.
..	Scandens.	Donda.		Pastures.
720 ..	Pertusus.	..		Ib.
..	Orthos (strictus.)	Rúkar.		Rocky jungles.
..	Ischæmum.	..		Ibid.—Gurlhrampur.
..	Pumilus.	..		Abundant—pastures.
(Cymbopogon.)	Martini.	..		Rare—Rasaura, Kaliangarh.
725 ..	Schænanthus.	..		Cultivated.
..	Contortum.	..		Pastures—very abundant spear grass.
Heteropogon.	..	Parba.		Pastures—a very useful grass.
Anthistria.	..	Musel.		Marshes.
..	Cimicina.	..		

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
730	..	Prostrata.	..	Moist pasture.
	..	Scandens, Roxb.	Bhaunr.	Pastures—coarse, refused by cattle.
	Apluda.	Aristata.	Bhanjuri.	Thickets.
	STIPEÆ.			
	Aristida.	Hystrix ?	Sarfi.	Pastures—and dry ground.
	..	Setacea ?	..	Ib.
	..	Funicularis ?	..	Ditto.
735	AGROSTIDÆ.			
	Polypogon.	Crinitus.	..	Moist places.
	Sporolobus.	Tenacissima ?	..	Fields.
	..	Coromandeliana.	..	Ditto.
	PHLEOIDÆ.			
	Perotis.	Latifolia.	..	..
	OLYRÆÆ.			
740	Colx.	Lachryma ?	..	Marshes.
		Barbata.	..	Rocky thickets.
	..			
	CHLORIDÆ.			
	Chloris.	Roxburghii.	..	Thickets.
		Melicadigitata, Roxb.		
	C.	Decora, E. MS.	Gulphulni.	Pastures—abundant.
	Eleusine.	Coracana.	Mandua.	Cultivated.
745	Leptochloa.	Filiformis.	..	Shady places.

745	<i>Dactyloctenium.</i>	<i>Egyptiacum.</i>	Makora.	Waste places.
	<i>Cynodon.</i>	<i>Dactylon.</i>	Dhúb.	Abundant.
	<i>Dinebra.</i>	<i>Verticillata.</i>	..	New ground, gardens.
	<i>Schenefoldia.</i>	<i>Pallida, N. S.</i>	..	Dry barren ground.
	<i>Melanocluchris.</i>	<i>Monaca.</i>	..	Ibid.
750	<i>Leptochloa?</i>	<i>Calycina.</i>	..	Rich black soil.
	<i>HORDEÆ.</i>			
	<i>Hordeum.</i>	<i>Hexastachyon.</i>	Jau.	Cultivated.
	<i>Triticum.</i>	<i>Æstivum.</i>	Gihun.	Ditto.
	<i>ROTBOLLIÆ.</i>			
	<i>Meorchium.</i>	<i>Rugosum.</i>	..	Black soil.
	<i>Mnesithea.</i>	<i>Lævis.</i>	..	Rich moist pasture.
755	<i>Hemarthria.</i>	<i>Fasciculata.</i>	..	Ib.
	<i>Ophiurus.</i>	<i>Corymbosus.</i>	Sonta.	Black soil.
	<i>Rotbolla.</i>	<i>Exaltata.</i>	..	Rich soil—edges of fields.
	<i>Manisurus.</i>	<i>Granulatus.</i>	..	Rocks or gravelly ground.
	<i>Oropetium.</i>	<i>Thomæa.</i>	..	Ibid.
760	<i>ARUNDINÆ.</i>		..	
	<i>Arundo.</i>	<i>Karka.</i>	..	Hedges, &c.
	<i>Thysanolaena.</i>	..	..	Rocks—Gurhampur.
	<i>POEÆ.</i>			
	<i>Poa.</i>	<i>Annua?</i>	Chirua.	Walks, &c.
	..	<i>Bifaria.</i>	..	Rocks.
	<i>Eragrostis.</i>	<i>Plumosa.</i>	..	Fields.
	..	..	..	Ditto.
	..	<i>Diandra.</i>	..	Rocks.
765	..	..	..	Ditto.
	..	..	..	Ditto.

Catalogue of plants found in the Banda district, 1847—49.

No.	Genus.	Species.	Native Names.	Remarks.
770	..	Nutans, Roxb.	..	Black soil.
	..	..	..	Edges of ponds.
	..	..	..	Fields—very common.
	..	Flexuosa ?	Daulphuli.	Ditto.
	..	Riparia.	..	Edges of streams.
	..	Multiflora, Roxb.	..	Sandy places.
775	..	Cynosyroides.	Dabri.	Low ground—abundant.
	..	Articulata.	..	Ponds—rice fields, &c.
	Elytrophorus.	..	..	..
	BAMBUSEÆ.	..	..	..
	Bambusa.	Stricta.	Bans.	Rocky hills.
	ORYZÆÆ.	..	..	..
	Oryza.	Sativa.	Dhán.	Cultivated.
	Seersia.	Aristata.	..	Ponds.
	RHIZOSPERMEÆ.	..	..	..
780	Marsilea.	Quadrifoliata.	..	Pools.
	EQUISETACEÆ.	..	..	..
	Equisetum.	Debile.	..	Fields.
	CHARACEÆ.	..	..	..
	Chara.	Verticillata.	..	Rivers, &c.
	SALVINIACEÆ.	..	..	..
	Azolla.	..	..	Ponds—streams.
	LYCOPODIACEÆ.	..	..	..
	Selaginella.	Imbricata.	..	Sandstone rocks—Patha.

785	POLYPODIACEÆ. Polypodium.	Proliferum.	..	Damp rocks—Kaliangarh as Abharkan—Bhiradhkund.
	Nephrodium.	Unitum.	..	Ibid.
	Pteris.	<i>An Molle, Roxb.?</i>	..	Ditto.
	Adiantum.	Amplectens.	..	Dry rocks and walls.
		Radiatus.	..	Ditto.
790	A.	Vestitum.	..	Wells—wet rocks.
	Cheilanthes.	Capillus Veneris.	..	Dry rocks.
	BRYACEÆ.	Dealbata.	..	
	Hyprum.	..	..	Wet rocks—Bhedak and Abharkan.
	Phascum.	..	..	Damp earth—common.

	Banda.			Sikh States.			Multan.		
	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.
Ranunculaceæ,	1	1	2	3	2	5	1	2	3
Annonaceæ,	1?	1	1	..	..	..	..	..	..
Magnoliaceæ, .....	..	1	1	..	..	..	..	..	..
Menispermaceæ,	3	..	3	2	..	2	1	1	2
Nymphæaceæ,	1	..	1	2	..	2	1	0	1
Nelumbaneæ,	1	..	1	1	1	1	1	1	13
Papaveraceæ, with Fu- mariaceæ,	2	1	3	1	2	3	4	2	5
Cruciferae,	1	7	8	3	6	11	7	6	13
Capparideæ,	8	..	8	5	1	6	6	1	7
Resedaceæ, .....	..	..	0	1	..	1	1	..	1
Flacourtiaceæ,	1	..	1	1	..	1	..	..	..
Violaceæ,	1	..	1	1	..	1	..	..	..
Polygalaceæ,	2	..	2	2	..	2	1	..	1
Frankeniaceæ, ....	..	..	..	..	..	..	1	..	1
Elatinaceæ,	1	..	1	2	..	2	1	..	1
Tamariscineæ,	1	..	1	1	1	2	3	..	3
Caryophyllaceæ, with Elleutraceæ,	3	..	3	7	1	8	5	..	5
Lineæ, .....	..	1	1	..	1	1	..	..	..
Malvaceæ,	19	6	25	11	4	15	5	3	8
Bombaceæ,	1	1	1	1	1	1	..	..	..
Byttneriaceæ,	4	1	4	2	1	3	..	..	..
Tiliaceæ,	13	1	13	9	1	10	6	1	7
Cistineæ,	1	..	1	..	..	..	..	..	..
Aurantaceæ,	2	7	7	1	5	6	0	6	6
Malphigiaceæ,	1	1	2	..	..	..	..	..	..
Sapindaceæ,	1	1	2	1	..	1	..	..	..
Meliaceæ,	1	2	2	..	3	3	..	2	2
Cedrelaceæ, .....	..	..	..	..	1	1	..	..	..
Ampelideæ,	3	1	4	2	1	3	1	1	2
Oxalideæ,	2	1	3	1	1	2	1	..	1
Balsamineæ,	0	1	1	0	1	1	0	1	1
Zygophylleæ,	2	0	2	2	0	2	4	0	4
Xanthoxylaceæ, ....	..	1	1	..	..	..	..	..	..
Rutaceæ, .....	..	..	..	1	..	1	1	..	1
Celastimeæ,	2	..	2	1	..	1	..	..	..
Rhamnaceæ,	5	1	6	2	1	3	5	..	5
Samydaceæ, .....	..	..	..	2	..	2	..	..	..
Anaiardiaceæ,	5	1	6	..	2	2	..	1	1
Moringaceæ, .....	..	1	1	..	1	1	..	1	1
Papilionaceæ,	70	20	90	29	18	57	26	13	39
Cæsalpiniaæ,	7	6	12	6	6	12	..	3	3

	Banda.			Sikh States.			Multan.		
	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.
Mimoseæ,	10	3	13	7	2	9	3	1	4
Rosaceæ,	1	1	2	2	8	10	1	6	7
Combretaceæ,	7	1	7	..	1	1	..	..	..
Granateæ, .....	..	1	1	..	1	1	..	1	1
Onagrarieæ,	2	1	3	5	..	5	..	..	..
Lythracieæ,	7	1	8	7	1	8	..	1	..
Alangiaceæ,	1	..	1	..	..	..	..	..	..
Myrtaceæ,	1	3	4	..	2	2	..	2	2
Cucurbitaceæ,	10	10	20	8	9	17	3	11	14
Portulacaceæ,	3	1	3	5	1	5	6	1	6
Ficoideæ, .....	..	..	..	1	..	1	1	..	1
Saxifragaceæ,	1	..	1	..	..	..	..	..	..
Umbelliferæ,	1	6	7	5	6	9	0	4	4
Loranthaceæ,	2	..	2	1	..	1	..	..	..
Rubiaceæ,	9	2	11	10	1	11	1	..	1
Compositæ,	42	4	46	42	9	51	10	3	13
Campanulaceæ,	2	..	2	1	..	1	..	..	..
Lentibulariæ, .....	..	..	..	3	0	3	..	..	..
Primulaceæ,	2	..	2	2	..	2	1	..	1
Myssenaceæ,	1	..	1	..	..	..	..	..	..
Ebenaceæ,	3	..	3	1	..	1	..	..	..
Sapoteæ,	2	2	3	..	3	3	..	1	1
Jasminaceæ,	1	5	5	2	3	5	..	2	3
Apocynaceæ,	7	5	11	5	2	7	..	1	1
Asclepiadeæ,	13	2	15	4	..	4	5	..	5
Gentianeæ,	6	..	6	4	..	4	1	..	1
Begrimiaceæ,	4	1	5	1	..	1	1	..	1
Pedulineæ, .....	..	3	3	..	1	1	..	1	1
Convolvulaceæ,	19	6	25	14	2	16	6	3	9
Boragineæ,	11	1	12	10	2	12	10	2	12
Hydroleaceæ,	1	..	1	1	..	1	..	..	..
Scrophulariaceæ,	13	..	13	15	..	15	5	..	5
Orobancheæ,	1	..	1	2	..	2	2	..	2
Solanææ,	6	4	10	6	6	12	7	4	11
Acanthaceæ,	30	1	30	18	4	22	..	..	..
Verbenaceæ,	4	1	5	7	1	8	1	3	4
Labiataæ,	13	4	17	9	3	12	3	3	6
Plumbagineæ,	1	..	1	1	..	1	1	..	1
Plantagineæ, .....	..	..	..	1	1	2	1	..	1
Sphenocleaceæ,	1	..	1	1	..	1	1	..	1
Salvadoraceæ,	0	..	0	1	..	1	2	1	2
Phytolaceææ,	1	..	1	1	..	1	2	..	2
Salsolaceæ, .....	..	4	4	5	4	9	7	2	9

	Banda.			Sikh States.			Multan.		
	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.
Amarantaceæ,	7	4	11	9	5	14	10	4	14
Nyctajineæ,	2	1	3	2	1	3	4	1	5
Polygonaceæ,	4	..	4	9	..	9	2	..	2
Laurineæ,	1	..	1	..	..	..	..	..	..
Aristolochiaceæ,	1	..	1	..	..	..	..	..	..
Euphorbiaceæ,	21	4	25	20	3	23	6	2	8
Piperaceæ,	1	1	2	..	..	..	..	..	..
Ulmaceæ,	1	..	1	..	..	..	..	..	..
Juglandæ,	1	..	1	..	..	..	..	..	..
Urticaceæ,	11	3	14	7	3	10	..	6	6
Salicineæ,	1	..	1	1	2	3	1	3	4
Myricaceæ, .. . . .	..	..	..	..	1	1	..	..	..
Platanæ, .. . . .	..	..	..	..	1	1	..	..	..
Gnetaceæ, .. . . .	..	..	..	1	..	1	1	..	1
Doubtful,	7	..	7	..	..	..	1	..	1
Total Exogens, ..	463	151	605	380	149	526	188	115	302
Palmae, .. . . .	..	2	2	1	..	1	..	1	1
Pandaneæ, .. . . .	..	1	1	..	..	..	..	..	..
Aroideæ,	1	1	2	1	2	3	..	1	..
Lemnaceæ,	1	..	1	..	..	..	..	..	..
Typhaceæ, .. . . .	..	..	..	2	..	2	1	..	1
Naiadeæ,	2	..	2	4	..	4	..	..	..
Musaceæ, .. . . .	..	1	1	..	1	1	..	1	1
Cannaceæ, .. . . .	..	1	1	..	2	2	..	1	1
Zingiberaceæ,	1	2	3	2	..	2	..	..	..
Orchideæ,	2	..	2	2	..	2	1	..	1
Amaryllideæ,	1	5	6	..	4	4	..	2	2
Irideæ, .. . . .	..	2	2	..	2	2	..	..	..
Hydrocharideæ,	4	..	4	2	..	2	..	..	..
Dioscoreæ,	2	1	3	1	..	1	..	..	..
Liliaceæ,	2	7	9	5	4	9	2	..	2
Juncaceæ,	1	..	1	1	..	1	..	..	..
Alismaceæ,	2	..	2	5	..	5	..	..	..
Butomaceæ, .. . . .	..	..	..	2	..	2	..	..	..
Commelynaceæ,	7	..	7	4	..	4	1	..	1
Eriocauloneæ,	1	..	1	1	..	1	..	..	..
Cyperaceæ,	12	..	12	35	..	35	3	..	3
Phalarideæ, .. . . .	..	..	..	1	..	1	1	..	1
Paniceæ,	33	7	40	38	4	42	12	4	16
Andropogoneæ,	26	3	29	16	3	19	9	2	11
Stipaceæ,	3	..	3	3	..	3	5	..	5
Agrostideæ,	3	..	3	7	..	7	2	..	2

	Banda.			Sikh States.			Multan.		
	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.	Wild.	Culti- vated.	Total.
Phlæoideæ,	1	..	1	1	.	1	..	..	..
Olyreæ,	2	1	2	3	1	4	..	1	1
Chlorideæ,	9	1	10	7	1	8	5	0	5
Hordcææ, . . . . .	..	2	2	2	2	4	4	..	4
Rotbollieæ,	7	..	7	3	..	3	1	..	1
Arundineæ,	2	1	2	2	..	2	..	..	..
Aveneæ, . . . . .	..	..	..	1	1	2	1	0	1
Poeæ,	15	..	15	12	..	12	9	..	9
Bambuseæ,	1	..	1	..	2	2	..	..	..
Oryzeæ,	1	1	2	1	1	2	..	1	1
Total Grasses,	103	15	118	98	15	112	59	8	67
Total Endogens,	142	28	170	166	32	198	67	14	81
Grand Total }	605	179	775	546	181	724	255	129	383
Phanerogams, }									

NOTES.

No. 3.—The question of the foreign origin of the custard apple admits of but little doubt on my mind. Those who argue in favour of its being indigenous quote the native name Sítaphal, and the tradition that it was upon it that Síta supported herself during her long wanderings in the forests in Bundelkund. And they state that it is met wild in many parts of the jungle of central India.

It is certainly found in great abundance on certain hills in Bundelkund, but on no hills is it found on which there are not large forts, e. g. Marga, Kallinger and Ajigarh. I have never seen a bush of it on any other, not even those next adjoining, and from all the enquiries I have made among the natives I gather that it is not found in any other localities.

The only place which has been specifically mentioned to me as a habitat is the hill of Asirgarh, likewise crowned by a fort. I see therefore no reason to doubt that it has run wild on these hills from gardens inside the fort, the large seeds dropped by birds monkeys or bears, would readily germinate, the only matter for surprise is that it has not been more widely diffused. I do not admit the closeness of the

resemblance of the fruit described by Capt. Abbott in the XVI. Vol. J. A. S. p. 666 to the custard apple. It might as well represent a Jack fruit—but is I rather imagine a fancy composition—than an imitation of any real fruit.

53.—*HIBISCUS CUSPIDATUS*—molliter pubescens, foliis 5 lobato-cordatis, capsulæ valvis bi-alatis cuspidatis. This much resembles *H. vitifolius* but differs in the softer pubescence and the cuspidate valves of the capsules.

The flowers are large and handsome.

54.—*SERRÆA*? *RUPESTRIS*—suffruticosa incano-velutina foliis ovato-oblongis argute serratis acuminatis, stipulis caducis subulatis, floribus axillaribus solitariis pedunculis articulatis, involucri 3-phylo, sepalis cuspidatis, capsula ovata 5-valvi, seminibus angulosis tuberculatis.

I hesitate to call this *Serræa* on such small data simply because it has a 3 leaved involucre and 5 valved capsule, as I have not seen the flower yet. It may form the type of a new genus.

I found it on the top of the hill at Sehonda and again at the fall of the Pysunee.

87.—I have named this plant doubtfully *Malva Borbonica*. It grows abundantly in the hedge of a garden at Banda. I have not seen it elsewhere. The habitat is that of *Sida*.

107.—I have entered under the name *Z. hortensis* the large fruited variety (?) of *Z. Jujuba*. See Roxb. H. Ind. Ed. Wall, p. 358.

144.—*INDIGOFERA ANGULOSA*—suffruticosa, pilis bifidis strigosocana, foliis 1-2 jugis cum impari foliolis ellipticis ovatisve mucronatis utrinque strigosis, subtus canis. Racemis axillaribus longissimis, multifloris legumine toruloso 1-4 spermo, articulis pene gibbis 4 angulatis, longe rostrato, seminibus fæcibus triangularibus.

The legumes are of a very peculiar shape and difficult to describe. It is a slender erect under-shrub.

149.—*TEPHROSIA VICIÆFORMIS*—herbacea, diffusa, ramis flexuosis costato-sub-angulatis in costis adpresse puberulis, stipulis setaceis, foliis 7-8 jugis foliolis oblongis plerumque retusis longiuscule mucronatis, supra glabris subtus parce et adpresse pilosis, calyce vexillâque pubescentibus, stam. monadelphis decimo basi sub-libero, stylo apice plano levi stigmate imberbi, ovario sericeo, legumine vix compresso,

pilis deorsim adpressis parcé adperso marginato apiculato, seminibus membrauâ tencrâ obtectis, oblongis eleganter marmoratis.

The inflorescence is similar to, but $\frac{1}{4}$ the size of *T. purpurea*, having either twin axillary flowers or few flowered racemes opposite the leaves. —Grows in granite detritus.

157.—This appears to me undescribed but as I have not seen it in flower I do not attempt to name it. The stem is covered with hamose hairs—and the joints of the legumes are likewise hamosely ciliated. It is an annual erect species growing 2 or 3 feet high.

168.—The great profusion of alysicarpi in this part of the country is remarkable. There are eight species described in W. and A. Prod. of these I have six; and five new species, of which I subjoin the following characters.

To the character of *A. longifolius*,—p. 233-4 W. and A. Prod.—may be added that the young racemes are covered by the imbricated caducous bracts which are broad ovate, cuspidate and hairy. The leaves in the Banda plant never exceed 3 and seldom 2 inches in length.

ALYSICARPUS OBOVATUS—Erectus, ramosus, caulibus ramisque terebibus pilosis, foliis *obovatis* (2 poll. long: 1 lat.) supra glabris subtus adpresse pilosis, petiolis canaliculato-alatis ciliatis, stipellis oblique cuneatis scariosis, stipulis scariosis basi sub-coalitis longe cuspidatis (cito laceris sub-caducis petiolo longioribus,) racemis spiciformibus terminalibus bracteis late ovatis acutis glabris minute ciliatis striatis herbaceis, rachi sub-glabro, pedicellis puberulis, calyce 4 fido segmentis 3 angustioribus integris acutis margine ciliatis, inferiore carinato, carinâ ciliatâ, leguminis articulis 4-6, infimo sterili, gradatim majoribus obliquis irregulariter rugosis acute aucipitibus, supremo levi puberulo mucroniformi.

This species grows from 3 to 6 feet high. The flowers open about 8 A. M. and close before 3 P. M. (in *longifolia* they open about 11 and close at 2). The standard is of a ruddy flesh color with a tinge of orange, the keel and wings a bright purple. The latter are attached by their edge to a groove in the keel at right angles. This is abundant in the Khureef corn fields, especially in black soil.

A. TETRAGONOLOBUS—procumbens a basi ramosus, ramis teretibus *lineâ pilosa* notatis, foliis breviter petiolatis ovatis oblongisve obtusis supremis angustioribus basi sub-cordatis supra glabris subtus strigosis

stipulis basi latis sub cordatis cuneatis acutis ciliatis petiolo longioribus, racemis laxis terminalibus oppositifoliisque, bracteis late ovatis acutis striatis puberulis ciliolatis, præ anthesia caducis, bifloris, rachi pedicellisque puberulis, calyce 4 fido segmento superiori bifido, omnibus acutis puberulis longe pilis albis ciliatis in fructu approximato-imbricatis, articulum secundum superantibus; leguminibus 4-8 articulatis, inter articulos valde contractis, sub-arcuatis articulis plus minus obliquis, inæqualiter *quadrangularibus* angulis costatis, lateribus valde reticulato-rugosis puberulis, infimo stipitiforini et supremo mucronato sterilibus.

This much resembles in habit *monilifer* and *styraci-folius* and like them grows in barren grassy places but is easily distinguished by the line of hairs on the stem and the 4-angled legume. Its flowers open about noon and close at 2 or 3.

A. GRACILIS—erecta glabra ramosa ramis teretibus, stipulis scariosis acuminatis sub-vaginantibus petiolo longioribus, foliis unifoliatis pedicello caudiculatis stipellis minutis punctiformibus foliolo anguste elliptico basi sub-cordato apice mucronato, supra glabro, subtus pallido, parce piloso, racemis axillaribus terminalibusque, bracteis caducis 2 floris, calyce 4-fido segmentis ciliolatis, superiore breviter bidentato, vix imbricatis, legumine calyce plus duplo longiore 3-5 articulo moniliformi articulo supremo mucroniformi puberulo, ceteris obliquis valde contractis sub-compressis glabris vix reticulatis.

This differs much in habit from all the other species I know, very slender, about 2 feet high, growing on shady rocks at Gurhrampúr.

A. RUPICOLA—erecta, parce ramosa, ramis teretibus lineâ puberula alternanti, pubescentiâ biformi pilis adpressis rectis, vel minimis apertis hamosis, foliis oblongis basi cordatis acutis vel obtusis mucronatis supra glabris subtus puberulis, pilis in nervis et margine rectis, ceteris hamosis, stipulis acuminatis glabris demum laceris. Racemis axillaribus terminalibusque bracteis ovatis acuminatis bifloris, calyce 4-fido lacunâ acutis sejunctis apice setaceis, posteriori 2-fido legumine 6-8 articulo infimo stipe biformi supremo mucronato, ceteris fertilibus striato reticulatis minute hamoso-puberulis, diaphragmate sæpius carente.

This species grows among granite rocks—as at Sainpúr and Kartal, its pubescence distinguishes it from the allied species.

ALYSICARPUS HAMOSUS—Diffusa, ramis teretibus hirsutis pilis vel longis rectis debilibus, vel brevibus rigidis hamosis, foliis uni-foliolatis stipulis lanceolatis scariosis ciliatis, stipellis minutissimis, foliolis late ovatis rotundatisve basi cordatis rotundatisve, pilosis, racemis terminalibus axillaribusque paucifloris rachi filiformi hirsuto, bracteis hirsutis caducis bifloris distantibus calyce 4-fido, laciniis hirsutis divergentibus acutis, postico bifido, legumine breviter stipitato, articulis circiter 7, supremo mucroniformi, ancipitibus nervoso reticulatis, utrinque diaphragmate ovali clausis, pilis biformibus hirsuto-lappaceis, seminibus maculatis compressis ovalibus.

This has entirely the habit of a *Desmodium*, it is in great abundance on the north face of Kallinger below the wicket. I have not seen it elsewhere. The whole plant is like several *Desmodi* very sequacious.

184-5.—From want of flowers I am unable to identify these two species of *Dalbergia*. The same remark applies to No. 221-2. *Albizziæ* sp. which are allied to *A. Wightii*.

201-2.—Both these are distinct from any species described either by Roxb. or W. and A. but my specimens being very imperfect I cannot give a proper character to them, both belong to the non-twining section of *Strophostyles*. The former has filiform stems slightly hirsute, leaves shortly acuminate rhomboid, adnate stipules, subulate stipells, racemes not much elongated few-flowered, legumes smooth, sub-cylindric sutures slightly thickened and sharp pointed, seeds truncated, bracts resembling the stipules.

The other is erect, stem hirsute, leaves puberulous rhomboid or 3-lobed, racemes short peduncled few-flowered, legumes straight, subterete thickened at the sutures, almost smooth.

243.—**ANAGEISSUS PENDULUS**—frutex v. subarboreus ramulis pendulis foliis sub-oppositis breviter petiolatis, utrinque minute adpresse sericeis, obovatis lanceolatisve, obtusis acutisve, pedunculis sub-axillaribus solitariis vel geminis 1-2 capitulatis; capitulis parvis globosis pubescentibus.

Calycis limbo 5 dentato dentibus obtusis; stam. 10, exterioribus cum calycis dentibus alternis; filamentis longis, anthera globosa subcordata, stylo simplici stamine, brevioris basi disco dense hirsuto circumdato: nuce bialato puberulo apiculato capitulis densis pisi magnitudine.

This very elegant bush completely covers some hills (as Patraha) to

the exclusion of all other underwood—when of large size it may form a tree 15-20 feet high, and the leaves are obtuse and obovate, they only assume the acute elliptic form where they have been browsed on by goats. They then assume a compact appearance like an alpine shrub. It is very probable that this is the *Conocarpus myrtifolius* alluded to by Royle as found by him on the banks of the Jumna—but as no description of that has been published I have given the above name to be rejected, if they be the same, as *myrtifolius* is very appropriate.

270—LUFFA BANDAAL—I have little doubt that this is Roxburgh's species, which was sent to him from Cawnpore, and is called Baudál by the natives, but his description is imperfect and somewhat incorrect. I have never seen the plant climbing and the echini of the fruit are not ciliate while the leaves are uniformly 5-lobed, however, the leaves of all cucurbits vary so much that they are not a character at all to be relied on, should it be a different species it should be called *longistyla*. The following is the detailed description.

Dioica diffusa, ramis sub-glabris scabriusculis, foliis longe petiolatis 5-lobis, lobo medio longiori acuto plus minus simiato lobato, ceteris acutis vel obtusis denticulatis, utrinque scabris glabris, cirrhis bifidis pedunculis geminis axillaribus uno longissimo 1-floro, altero racemoso multifloro, bractea parva ovata, pedicellis gracilibus, calyce 5 fido rotato, corolla rotata 5 fidâ tenui alba, segmentis obtusis extus parce pilosis, staminibus 5, triadelphis ♀, pedunculis solitariis unifloris petiolo (adulto) brevioribus calyce villosa, limbi laciniis 5 acutis, corolla sub-rotata ut in ♂—stylo longo apice 3-fido stigm. 3-bifidis—peponide ovato, v. sub-globozo echinato echinis glabris apice stylo persistente increcente apiculato.

The fruit is bitter and is sold in the bazars as a horse medicine. It grows abundantly on marshy land at the commencement of the rains—the flowers open in the morning and close before ten. They are pure white and very delicate in texture.

298-9.—I have not seen the flower of either of these species, therefore am uncertain as to their genus. The former has dark polished brown bark and deep green polished leaves lanceolate. The latter has pale bark and small leaves not unlike *Gardenia tetrasperma*.

309.—VEMONIA (*Decaneurum*) DIVERGENS—This is in truth as well as *V. multiflora* technically a *Vemonia*; the outer series of short pistils is present but most exceedingly caducous.

308.—*V. ASPERA*.—The plant I thus name and which I have also found in the Sewaliks and on Parasnath agrees exactly with Roxburgh's description of a few large terminal capituli; they cannot be called as in D. C. "*Paniculæ subcorymbosæ*."

311.—*ADENOSTEMMA ANGUSTIFOLIA*—foliis lineari-lancelotis utrinque acuminatis longe petiolatis serrulatis corymbysi oligo-cephalis, acheniis levibus glandulis pedicellatis coronatis.

My specimens were gathered very late in the season. I could find but a single flower and therefore cannot now give a more detailed description.

It may be a narrow-leaved and few-flowered variety of *A. leiocarpum* with which I am not acquainted.

312.—*ERIGERON ASTEROIDES*—I should have no doubt about this species had Roxb. not omitted all mention of the tubular ♀ florets. It is most probably the same as *E. sublyratum* D. C. but the involucre is glandular not sub-glabrous.

317.—*BLUMEA AMPLECTENS*—I am not sure of the identity of this, D. C. describes it "*fl. masc. circiter 15-20*"—in my plant there are at least 30—he also calls it sub-glabrate whereas this even in the oldest plants is villous. Further no mention is made of the peculiar character of the pappus—which is in the disk 15-bristled, in the ray 5-bristled, and the radical achenia 5-ribbed—should it be a new species I would propose the name *undulata*.

319.—*B. BOVINA* (*oxyodonta* B. D. C.) I refer this plant to this name with some hesitation. I know several forms which to me appear distinct species which can only be referred to *oxyodonta*. In this the months of the florets are ciliate; and I have in vain searched for anthers: hundreds of capituli I have examined and found none. I have observed the same in a small procumbens *oxyodonta* common at Saharunpoor.

321.—*B. FONTINALIS*—Caulibus erectis strictis pubescentibus, foliis obovatis grosse dentatis dentibus calloso mucronatis in petiolum attenuatis utrinque pubescentibus, paniculis confertifloris, ramulis 3 floris, inferioribus axillaribus folio brevioribus, superioribus thyrsoides sub-aphyllis, capitulis ovatis nutantibus, involucri squamis exterioribus lanceolatis hirsutis ciliatisque, interioribus subscariosis linearibus acutis discum superantibus, floribus radii oo; disci paucis 5-meris apice

haud incrassatis, antheris tenuiter et distincte subcaudatis, pappo albo scabrello pauciseto. Fructum maturum non vidi.

I found this at the spring-heads on the banks of the Cane (Ken) but it dried up before coming to perfection. It may be considered a variety of *B. lacera*, but differs much in appearance, the leaves being of a dark gloomy green and the stems and involucre pur-purescent.

323.—*PULICARIA FOLIOLOSA*—My plant, which is not uncommon on the banks of Ken, differs from description in D. C. V. p. 480 in being of a bright light green and not cinereous—and to the description might be added “*acheniis villosis apice glanduloso teritibus.*”

324.—*PULICARIA SAXICOLA* decumbens, ramis divaricatis incanis-ve, demum glabratis foliosis apice 1-cephalis, foliis omnibus sepilibus angustis oblongis ramo sub-adpressis integris vel remote denticulatis obtusis apice calloso-mucronulatis utrinque plus minus sericeo-pubescentibus involucri squamis exterioribus arachnoideo-lanosis oblongis *latiusculis* apice subiter attenuato liberis, junioribus foliaceis demum sphacelatis infimis infra glabriusculis, sursum pilosis subiter cuspidatis, fl. radii ligulâ 3 nerveâ, styli ramis longis apice acumine appendiculatis fl. disci 5-meris margine incrassatis, antherarum caudis *latiusculis* basi sub-laceris, styli ramis brevibus lanceolatis post anthesin caducis, pappo exteriori coroniformi lacero vel ciliato-dentato, inferiore 10-setoso setis apice barbellatis sub-plumosis, achenio sub-tereti compressiusculo lineis 5 pilosis instructo, receptaculo alveolato parcè piloso.

Grows on the rocks or gravelly debris of the granite hills; as at Sehonda, Kartal. The solitary long peduncled heads, sessile not stem-clasping leaves, and the pappus distinguish it readily from all the species in D. C.

384.—*GYMNEMA MELICIDA*. The only decided character by which I can distinguish this from *G. sylvestris* is that the squamulæ of the corolla are *acute* and *cover the gynostegium*, not obtuse and shorter as described by Duaisne. The leaves are more lanceolate and more sharply pointed than in the specimens of *sylvestris* that I have.

I have given the name from the peculiar quality of the leaves. A leaf chewed in the mouth deprives it of all power of tasting any thing sweet for many hours afterwards.

397.—I should have named this *E. sulcatum*, but that the pores of

the anthers are not confluent, I therefore am in doubt regarding it. Should it not be *sulcatum*, I would call it—

EXACUM RIVULARE, caulibus vel pluribus erectis *acute* 4-gonis plus minus ramosis, foliis radiculibus petiolatis caulinis sepilibus oppositis oblongo-lanceolatis acutis trinervis, calycis 4-partiti alati segmentis acutis, corollæ purpureæ segmentis late obovatis tubo prope duplo longioribus, pedicellis foliis longioribus.

441.—**TRICHODESMA HIRSUTA**—Erecta, ramosa, hirsuta, ramis 4-angularibus sulcatis, foliis caulinis oppositis sepilibus ovato lanceolatis scabro-hirsutis floralibus oblongis alternis sub-amplexi-caulibus pedicellis nutantibus calycibusque hirsutis sepalis basi longe sagittatis acuminatissimis in fructu apertis (nec clausis ut in *indica*) corollæ cæruleæ segmentis rotundatis apice subiter in caudulam productis nuculis levibus.

This differs from *T. indica* in habit and pubescence and in the shape of the leaves—the horns of the calyx are much longer than even in *T. spinulosa*.

443.—**TRICHODESMA INÆQUALE**—Erectum ramosum totum strigis patulis hispidum, foliis inferioribus sepilibus oppositis late ovatis obtusis superioribus sub-amplexicaulibus cordatis, floralibus alternis late amplexicaulibus acutiusculis pedicellis oppositifoliis 1 floris, calycis (quasi pentapteri) segmentis basi acuto auriculatis, margine et nervo medio hispidis, corollæ limbo paullo brevioribus corollæ *inæqualis* tubo oblique contracto, intus glabro, limbo sub-bilabiato intus piloso, labio superiore 3-lobo, ad faucem foveolis 2 notatis, inferiore bilobo lobis latoribus omnibus obtusis mucronatis, æstivatione quincunciali, antheris in tubum corollæ sessilis (filamento adnato basi libero) dorso pilosis apice in cuspidem nigriscente rectum acutum productis pilis longis albis erectis dorso vestitis,—squamis 5 ciliatis emarginatis ad bases staminum usque oppositis, stylo ad medium antherarum attingente apice truncato excavato, stigmatē in medio prominculo ovario glabro, nuculis dorso levibus ventre rugosis.

I have great doubts whether this is *J. amplexicaule* or not, caused by the omission in D. C. (p. 162, Vol. X.) of all mention of the irregularity of the corolla.

434.—**RHABDIA FLUVIALIS**—Suffrutex glaberrimus, ramis virgatis teretibus foliis sub-alternis v. irregulariter dispositis crebris crassius-

culis obovatis spathulatisve sub-sessilibus mucronatis glaberrimis margine tantum pilis paucis adpresse strigosis floribus vel solitariis vel in cymis sub-dichotomis in apice ramulorum dispositis, calyce 5-partito segmentis anguste ovatis acuminatis quincuncilibus strigose ciliatis, corolla campanulata 5-fida, æstivatione 5 unciali glabra, staminibus 5 basi corollæ ortis, inclusis, filamentis latiusculis subiter attenuatis antheris terminalibus basi fixis sagittatis rima laterali dehiscentibus, polline elliptico, ovario biloculari glabro ovulis 4-pendulis, stylo bifido, stigmatibus capitatis. Bacca 4 sperma, succo aqueo fulvo, dissepimento evanido, seminibus 2-3 sæpe abortivis, testa dura embryon leviter curvato in medio albuminis tenuis sito, cotyledonibus planis crassiusculis obovatis.

This shrub is very peculiar in its habit growing upon granite rocks in the bed of the river often submerged for weeks, its long branches hanging down into the water when the rocks are left exposed. These branches are so flexible and tough that they may be tied in a knot without breaking.

I have entered fully into the description as there is some doubt in my mind whether this should not be referred to *Ehretia*, or whether (perhaps with *E. viminia*, Wall) with another very similar species which differs in having silky pubescence, found by Major Madden in the same sort of position on rocks in the Kali Ganga in Kemaon, which I propose calling *R. sericea*, it should not be considered as belonging to the S. American genus *Rhabdia*.

The differences between the two genera appear to consist first in the æstivation of the calyx—secondly in the shape of the corolla—thirdly in the proportionate length of the stamina and corol—fourth in the insertion of the stamina—fifth in the position of the anther on the filament—sixth the style whether bifid or simple—seventh the nature of the berry—eighth the nature of the albumen—ninth the shape of the embryo. In the 1st, 2nd, 3rd, 4th, 5th and 7th points, it is a *Rhabdia*—but in the 6th, its bifid style, in the 8th, its thin scarcely fleshy albumen, and in the 9th, the slightly curved embryo, would make it rather an *Ehretia*. I think the preponderance of characters, added to the habit give the verdict in favour of *Rhabdia*.

470.—*EBERMAIERA PEDICELLATA*—Glabriuscula partibus junioribus lanato-puberulis, foliis ovatis oblongisve in petiolum atte-

nuatis obtusis integris fl. ternis axillaribus pedicellatis, bracteis anguste ovatis basi attenuatis calycisque lacineis glanduloso—ciliatis, corollæ fauce filamentisque pilis parvis rubris instructis, antherarum loculis mucronatis, minorum discretis. Found in the inside of the ancient fort of Hansi.

510.—*SALVIA PUMILA*—There is little doubt of the identity of this, as I have since found it in its Jacquemontian habitat in the Punjab: my specimens differ however, in having the lower cell of the anther polliniferous, the upper stamen though very minute, is present and club-shaped. It is very strange, how this plant, a native of the Salt and Soliman ranges, naturally growing among dry rocks, should have been found on the sands of the Jumna. The leaves are of a cinereous grey not green colour as described.

512.—*SALVIA FONTINALIS*—Erecta, ramosa, caule quadrangulati ramisque adscendentibus (nec brachiatis) deorsum pubescentibus, foliis lanceolatis in petiolo (radicalibus longissime) attenuatis crenato-dentatis utrinque pilosis vix rugosis verticillis 6 floris pedicellis folio florali deflexo longioribus, calyce glanduloso pubescenti, labio superiore brevissime 3 dentato dente medio brevior* inferioris dentibus acutis, corolla calycem vix superante labii inferioris lobo medio rotundato maculato, staminibus superioribus abortivis minutis inferioris connectivo postice sursum producta loculum cassum ferente.

Spring-heads by the Cane. Perhaps this is but a variety of *plebeia*. Roxb. I. p. 146, mentions the upper sterile stamens,—the shape of the leaves, more bushy habit and 3-toothed upper lip of calyx are the distinguishing marks.

543.—My specimens are too imperfect to admit of proper description.

555.—I do not attempt to describe the Euphorbiaceæ that appear to me now, in the absence of any later work than Roxburgh.

575.—The leaves of the seedling *Almus integrifolia* are coarse, serrate and scabrous.

644.—*COMMELINA GELATINOSA*—caulibus ramosis semi-teretibus uno latere plano scabro pubescente foliis oblongo—lanceolatis acuminatis sub-inæqualibus subtus glaucis minute puberulis supra scabris breviter petiolatis vaginis striatis margine fisso ciliatis fauce barbatis,

* In the dried specimen, the divisions adhere, so as to make it appear entire.

spathis falcatis acutis turbinato-cumellatis uni-rarius bi-pedicelliferis, ambobus floriferis capsulâ 3-loculari 3 sperma striatâ.

Rocks at Banda.—

Caules ramosi geniculati diffusi sub-ascendentes vaginæ breves striatæ scabriusculæ margine ciliatæ ore barbata, folia oblongo-linearia 4-5 pollicaria. Spathæ terminales sub-corymbosæ pedunculatæ bracteis hyalinis ovatis pedunculum intra vaginam amplectentibus, falcatae acutæ turbinato-cucullatæ striatæ parce pilosæ succo gelatinoso plenæ. Pedicelli singuli inclusi ramis gemini (altero exserto) 3-4 flori quorum plerumque unum tantum fructifer; sepala 3 hyalina, superum ovatum acutum erectum, 2 concava, obtuso deflexa prope apicem in unum coalita, cyathum emarginatum formantia. Petala 2 longe unguiculata limbo orbiculato pallide cærulea, tertium minimum hyalinum ellipticum acutum, stamina 3, duorum antheris ovatis cæruleis, tertii flavâ (valvis nigrescentibus) late sagittatâ basi deformatâ dorso glandulosa. Parænteræ cruciatæ glanduliferæ. Stylus in alabastro circinnatim, defloratione spiraliter tortus. Capsula 3 lori, 3 spermis tenuiter striata in spatha nidulans semina majuscula nigra non lucida.

This comes nearest to *C. Donii*, *striata* and *angustifolia*, but is immediately distinguishable from them by the scabrous upper surface of the leaves, as well as other points. The spathes are generally filled with a clear gelatinous substance.

665.—*PASPALUM BIFARIUM*—culmis decumbentibus glabris vaginis acute carinatis internodiis multo longioribus, foliis plerumque approximatis bifaris lin-lanceolatis acutis glaberrimis glaucescentibus anguste marginatis apicem versus tantum semilatis, ligulâ membranaceâ in margine vaginæ decurrente, culmis floriferis terminalibus lateralibusve paulo elongatis, racemis conjugatis secundis divergentibus, rachi planâ herbaceo-marginatâ locustis ternis pedicellis inæqualibus decorum fl. superiorum plus minus rachi adnatis apice tumidis (locustâ cadente) cupuliformibus glabris lævibusque, glumis 2 pubescentibus inæqualibus vix florum excedentibus vertices, Paleis in fructu induratis lucidis ovatis.

Found in ground that had been overflowed under trees at Rewai, a low grass, but as other species commonly larger were growing near it in a reduced form it may sometimes grow larger. As far as the description Kunth, p. 48 of *P. brevifolium* Hüg. goes it answers this

but it is so short that one cannot be certain from it. It may be Roxb.'s *Milium filiforme*, p. 314, Vol. I. but I do not think it can be.

669.—*PANICUM CONCINNUM*—Repens culmis teretibus glabris, nodis pilosis (inferioribus radicanibus), vaginis inferioribus pilosis superioribus glabris margine tantum ciliatis arcte culmum involventibus, fauce ciliato, ligula ciliata lamina plana quasi petiolata basi pilis longis barbata ceterum glabra, scaberrimâ margine serrulata (3-4 lin. lata, 2-4 poll longa). Paniculis sub-decompositis secundis, ramis secundis racemosis vel solitariis sessilibus vel 1, 2 pedicellatis adjunctis, rachi scabro-angulosa, rachilla scabro pubescente, locustis solitariis omnibus brevi pedicellatis ad apicem pedicelli articulatis, bifloris, glumis 2 exteriore minima ovata apice membranaceâ, interiore (inferiore) ovata acuta 3-5 nervea extus pilosa.

fl. ♂ vel ♂ 2-paleato, palea exteriore glumâ secunda paulo longiore 3 nervea ciliata apice et margine hyalina acutiuscula, interiore hyalino oblongâ 2-nerveâ fl. ♂ paleis lucidis obtusis lævissimis, stam. 3, anth. e flavis fuscis, lodiculis 2 oblique obcuneatis eroso truncatis.

This delicate and elegant species is an annual in cultivated fields, rather light soil; it is readily distinguished from all the other species I have seen in its pubescent racemose inflorescence, found at Mowai near Banda.

676.—*PANICUM TRIFLORUM*—Annuum, repens, molliter pubescens. Culmis decumbentibus semi-teretibus pubescentibus, vaginis laxis, ligula breviciliatâ, foliis oblongo-linearibus basi sub-cordatis apice breviter acuminatis quandoque latiusculis, panicula pauce-ramosis, tomentosa, racemis rectis sub-alternis divergentibus, rachi et rachilla excavatis dorso tomentosa angulis scabris pedicellis pilosis setis paucis fulcratis locustis B. 2, vel 1, uno subsessili late ovatis acutis, trifloris (rarius 2); glumis 2 exteriore sub-decurrente sub-hyalina obscure 3-nervea ceteras basi arcte amplectetenti, interiore late ovata 5 perviâ floribus 3 (v. 2,) quorum 2 (v. 1,) neutris. 1 ♂, flore inter neutros, fl. neutro inferiore 1-rarius 2-paleato paleâ exteriore 5 nervea acutâ, interiore hyalinâ alterius floris neutri palea exteriore duriore concavo 5 nervea apiculata, interiore tryalinâ oblongâ margine involute bidentato, floris fertili paleâ rugosis, exteriore concava 3-nervea nervis prominentibus glabris, acutiuscula interiore isto incluso, marginibus involutis sub-auriculatis, lodiculis majusculis, dolabrifliformibus crenu-

latis, stam. 3, antheris vix exsertis fuscis, stylis 2 a basi divergentibus, stigmatibus ramoso-plumosis, semine hinc compresso.

Among rocks at Banda; I formerly found it at Rudour in fields, in the Sikh states—the number of florets at once distinguishes it from the whole genus.

672.—This species resemble *Vestitum* and my *Triflorum*, my specimens are unfortunately imperfect.

673-4.—These are both common species and one of them is probably *P. umbrosum*, Roxb.—but without authentic specimens of his plant I cannot determine which—in fact the same remark applies to some others that I have named in the list. I have not referred any to the genera *Oplismenus* and *Eriochloa*, the limits of which as distinguished from *Panicum* are not I think satisfactorily laid down yet, while *Digitaria* I consider an indisputably natural genus.

697.—**PENNISETUM HOLCOIDE**—This answers very completely to the description in Roxb. of *Pan. holcoide*, p. 285 excepting that he says the flowers grow without order; whereas in my plant they are regularly arranged on the alternate joints of the waved rachis so as to make a four-sided spike.

698.—**P. ARANEOSUM**—Erectum culmis basi geniculatis radican-
tibus nodisque glabris, vaginis inferioribus pubescentibus superioribus
glabris, ligula ciliato-membranaceâ, foliis latiusculis planis glabris
prope basim pilis perpaucis longis sparsis barbellatis, subtus lævibus
supra scabris margine semilatis; spicis terminalibus involucris multi-
setosis duplici serie setis exterioribus minoribus, interioribus valde
inæqualibus prope medium pilis longis araneosis coalitis apice nudis
hispidis, uno ceteris duplo longiore (8·9 lin) bi-locustato, locusta una
sessili biflora, alterâ pedicellato prius florente uniflorâ; floris sessilibus
gluma exteriori flore duplo breviori hyalina longissimo araneoso-ciliatâ,
altera flore superante hyalina 3-5 nervi apice breviter mucronatâ, flore
inferiore neutro vel ♂ 1-2 paleata, p. exteriori truncata hyalina
apice ciliolatâ glumam æmulante sub 3-nervi glanduloso-punctata,
p. altera oblonga hyalina apice ciliatâ plerumque carente, lodiculis
nullis, Flor. ♂ p. lucidis inclusis sub-acutis, apice ciliolatis stam. 3,
antheris flavis apice mucronulatis, lodiculis oblique lanceolatis acutis,
ovario ovato, stylis basi breviter coalitis ramis longis exsertis apice
plumosis.

Grows among the granite rocks on the hills about Banda. Differs from *P. triflora* in having but 1 or 2 flowers, the form &c. arachneosity of the involucre and the mucronulate paleæ of the ♂.

699.—*P. IMBERBE*—Erecta ramosa, culmis nodisque glaberrimis vaginis glabris, ligula brevi lacero-ciliata, folia sub-petiolatis pilis paucis barbatis latiusculis acuminatissimis utrinque glabris supra scabris subtus lævibus margine serrulatis, spicis terminalibus axillaribusque cylindricis laxis rachi compressa utrinque (pedicellis adnatis?) alato involucris sessilibus setis basi connexis sub-simplice serie inæqualibus unâ ceteris plus duplo longiore locustâ solitariâ 1 flora, glumis 2 intense rubro-purpureis glabris exteriore longiore acuta interiore 3 dentata, marginibus involutis hyalinis (an potius gluma exteriore carente, et hac paleâ neutra? floris secundi?) paleis pallidis acutis apice ciliatis demum induratis semen amplexantibus, stam. 3 antheris flavis locellis parallelis muticis glabris, stylis longis dense barbellatis pallidis.

Grows among bushes 3-8 feet high, leaves 6-18 inches long, 4-16 lines broad—habit much as the two preceding found at Gurhrâmpûr, November.

711.—*SORGHUM GIGANTEUM*—This is I apprehend rather a variety of *S. Halepense* than a distinct species. It differs principally in size, the great breadth of the leaves (1 inch) and having 2-pedicelle ♂ flowers to the sessile ♀.

706.—*POGONATHERUM TENUE*—culmis filiformibus ramosis vaginis glabris, ligulâ membranaceâ ciliatâ folio cordato-ovato acuminata (1 poll long.) pedunculis elongatis gracilibus spicis conjugatis, rachi articulatâ pilis albis inæqualibus longi ciliatis, articulis 1-floris, locustis solitareis. Gluma exteriore biuervi bi-mucronatâ nervis hispidulis g. superiore ovatâ in setam ipsâ longiore productâ palea inferiore profunde bi-partitâ laciniis acutis hyalinis cum aristâ longa tortili e fissura ortâ, p. superiore hyalina, lodiculis o, stigmatibus plumosis.

This is a small delicate grass growing among rocks at Gurhrâmpur, quite distinct from either of the Himalayan species of which I have specimens, it resembles in habit *Leptatherum molle*. The ciliate rachis at once distinguishes it from *Andropogon filiforme*, Roxb. which appears to belong likewise to this genus, though the character as given in Endlicher should be slightly altered to admit them.

715.—*ANDROPOGON ECHINATUM*—Culmis tenuibus ramosis geniculatis glabris nodis pubescentibus vaginis brevibus ore barbatis, ligulâ ciliata lacerâ foliis lanceolatis acutis utrinque molliter pubescentibus pilis basi tumidis ciliatis nec serrulatis, spicis conjugatis secundis pedunculis longis pubescentibus, spiculis geminis alternantibus una in rachi erosâ pubescenti sessili altera pedicellata locusta sessilis gluma exteriore coriaceâ ovato-lanceolata acutâ margine inflexâ exteriore pectinato-serrata, dorso nervis 3-5 echinatis, gl. interiore tenuiore sub-hyalina 3 nervi, carinâ ciliata bifida lobis acutis, floris ♂ paleis 2, exteriore oblonga obtusa hyalina, p. interiore in aristâm geniculatam tortilem producto nec basi hyalino nec ciliatâ, lodiculis obcuneato-truncatis tenuibus, stam. 3 anth. fulvis, stigmatibus elongatis fulvis.

Fl. neutri, p. tris longioribus, 2-vel una carente in glumâ superiore inclusis, acutis.

Locustæ alterius pedicello compresso ciliato gl. inferiore acutâ 5-nervi, nervis adpresse ciliatis nec echinatis, gl. sup. tenuiore 3-nervi marginibus involutis fl. ♂ pal. sup. acutiuscula, inf. acuminata, stam. 3.

Grows among rocks—Jharal—Budhgarh, &c.

This approaches very near *And. lanceolatus*—but is easily distinguished by the echinate back. It will probably form another species of *Bathratherum*, but the generic character as given in Endlicher (sup. p. 1354) must be altered to admit it.

722.—I am not satisfied which—this or No. 721,—is the true *A. Ischæmes* of Roxb.

727.—This is the most valuable grass in Bundelkund, I am unable to refer it to any of Roxb. species—and unfortunately have by some oversight omitted to preserve specimens of it.

727.—*ANTHISTIVIA CIMICINA*—Culmis erectis glabris nodis annulo piloso cinctis vaginis acute carinatis carinâ papillosa, ligula pilosa foliis longiusculis acuminatis glabris scabris margine basim versus integris vel papillosis apicem versus serrulatis, foliis floralibus gradatim minoribus magisque papillosis vaginis margine longe ciliatis, paniculis ramosis foliaceis, plus minus nutantibus, pedunculis axillaribus squamis hyalinis circumdatis, racemosis papillosis, involucri acuto cymbiformi margine membranacea carinâ papillosâ.

Locustis 7-quorum 4 verticellatis ♂ pedicellatis involucrantibus

uno centrali ♂ pedicellato intra duos ♂ pedicellato, l. 4 ext. pedicellis pilis albis circumdati, glumis 2, acutis ellipticis, exteriore 5-7 nervi, nervis plus minus papillois glabris vel exterioribus ciliatis, interiore 3-nervi glabra. Paleis 2 linearibus hyalinis apice laceris, stam. 3-antheris luteis, lodiculis parvis oblique obcuneatis erosis.

Loc. ♂ centralis pedicello pauce piloso, gluma exteriore ovata acuminata apice bidentata, basi glabra ceterum puberula interi. glabra sub 3-nervi acuta, margine inflexo, palea hac lineari in aristam longam tortam geniculatam hispidam producta, p. altera hyalina truncata ovarium amplexante lodiculis minutis, ovario ovato in stylis angustato, stigmatibus dense plumosis; locustis 2 ♂ ut supra sed glabris.

This comes next to *A. Wightii* from which it differs in more erect habit, ciliate involucres and awned flowers and minute lodicles which are large in *Wightii*. It is moreover generally of a reddish hue. *Wightii* and *prostrata* are bright and pale green: like them this has, but in a still stronger degree, a most offensive smell exactly like that of a bed-bug whence the specific name I have given it. It grows on the margins of ponds and overflowed pasture land.

734.—This I have referred with a doubt to *funicularis*, the leaves of my plant are beset with long scattered hairs, not smooth as described, and Ruprecht does not allude to the arista being 3-cornered which appears a peculiar character. The inner glume is pale purple.

739.—I have 3 species certainly distinct all of which answer the descriptions of *Coix lachryma* as far as they go—and I am unable to say which is the true one.

741.—*CHLORIS ROXBURGHII*.—This is well described by Roxb. under the name *Melica digitata*, it is very distinct with very long linear spikes which hang loosely down.

748.—*SCHÆNFELDIA PALLIDA*.—Annua, ramosa, glabra, vaginis margine ciliolatis ligulâ ciliato-membranaceâ, foliis linearibus hinc illinc pilis perpaucis sparsis demum convolutis, spicis geminis (raso solitariis ternisve) secundis confertifloris ($2\frac{1}{2}$ 3 uncialibus) rachis margine serrulato, locustis 1 floris sessilibus bifariis, glumis 2 persistentibus acute carinatis nervo medio sulcatis, apice in setulam productis, in priore majore paleis plus duplo longiore, flore in callo sericeo stipitato bipaleaceo, p. exteriore majore alteram plana enervem involvente. Extus puberula sub apicem fissum aristam longissimum hispidum

gerente lodiculis glabris carnosis apice emarginatis, stam. 3, anth. flavis, ovario fusiformi, stylis basi approximatis, apice plumoso paullo exsertis, semine longo sub-fusiformi magno cæruleo.

The only described species of this genus is a native of Senegal ; having seen only the Gen. Char. in Endlicher, I know not how far this may differ specifically. It may be the same. This plant grows pretty abundantly on barren kunkury ground—old roads, &c.—at Banda it has a very peculiar light straw colour.

749.—Not knowing what the new specific name of this grass may be, I have inserted the old one which no longer applies to it—it is the *Pommeruelle monæca* of Roxb. and is frequently referred to under that name in Griffith's Journals.

750. This is Roxburgh's *Eleusine calycina*, referred by Kunth to *leptochloe*—from which however the subulato-setaceous glumes would repel it to some new genus.

761.—This is the *Agrostis maxima* of Roxb. now *Thysanolaena*, but I know not the specific name given. It is quite different from the *Thysanolaena* abundant in the lower Himala.

765, &c.—Of the Poas and *Eragrostis* I have several new species but not being able to satisfy myself which are Roxburgh's without authentic specimens of his, I refrain from describing any.

I add a numerical abstract of the Flora according to families, distinguishing such as are wild and such as are only under cultivation. It is interesting to compare this with the similar abstract for the floras of the Sikh States and of Mooltan, showing the gradual decrease of truly tropical families and the appearance of others of more temperate regions. The extreme poverty of the Mallic flora is thus shown very conspicuously. I hope soon to be able to communicate a detailed list of the Mooltan flora as far as two years' experience of it goes ;—for the difference is even greater than what would appear by this numerical abstract. Notes on local floras are of great importance in working out the geographical botany of India.

Mooltan, October 7th, 1851.



Literary Intelligence.

Rájâ Rádhákánta Deb has just completed the 7th and last volume of the Sabdakalpadruma. The unintermittent labors of more than a quarter of a century have at last come to a successful close. The author has already achieved his reputation, as well among the Pandits of Hindustan, as the Savants of Europe. His Sanskrit Encyclopædia stands foremost among the contributions which the present or any preceding century has rendered to Sanscrit learning. The utility of such a voluminous compendium of the arts and sciences has been fully appreciated, and its author has received more than a solitary mark of acknowledgment from the Oriental scholars of the day. It would be curious to inspect the numberless testimonies of approbation which Native and Mahrattá, English and German, have competed with each other in offering to his merits; nor is the labour undeserving of even a higher tribute. The Rájâ has spent the brightest part of his mortal existence in the hope of living an immortal life for generations to come, and reared an imperishable monument for himself. He himself alludes to his labours in the Preface appended to the present volume of his work :

পঁচাশাবধিবর্ত্তমানকালপর্যন্ত বহুতরপরিশ্রমে:

“From my days of scholarship up to the present time having undergone an immensity of labour, &c.,”—a period of time embracing no less than 35 years. This is more than what Furdousi, the great chronicler of the Kings of Persia, has alleged.

بسی سال بردم بشر نام رنج

“Thirty years have I laboured after the Sháh Námeḥ.”

The words which immediately follow those already quoted from the Preface are worthy of notice : ধীরবরনিকরসাহায্যৈ: “with the assistance of a variety of the most learned individuals.” This is what the Pándits devoted for years to this Herculean task had every right to expect at his hands. It might be supposed that one who is so sanguine in his expectancy of obtaining his due at the hands of posterity should not be forgetful of the reputation of his coadjutors. It is alike honorable to himself, and nothing but just to his learned assistants,—for we must be permitted to observe that in Sanscrit learning the Pandits in question

are no whit inferior to the Rájá. Every body knows that so vast and voluminous a thing could never have come forth from the hands of a single mortal. Forty Frenchmen assisted in the completion of the Dictionary of the Royal Academy. It is a pity the names of Tárachánd Tarkabhusana, Is'vara Chandra Tarkasiddhánta, Rámacumára Siromaṇi, and Sarbánanda Nyábágishya, the present, and of Sivanath Bhattacharjya and Hariprasád Tarkapunchanun the past co-adjutors of the Rájá have not been recorded in a corner of his Preface, but we think this is purely accidental,—for the Rájá would not willingly grudge them so necessary a consideration. We allude to the fact particularly inasmuch as remunerated labor however immeasurably superior to the remuneration itself, commands not the esteem and gratitude of the natives of this land. But this so far from being a correct principle of judgment that the most remarkable achievements of the world would in that case be completely bereft of their engrossing merit.

In a cursory notice of this nature, it is impossible critically to consider the variedly important contents of this Lexicon. It can be however generally stated that our Encyclopædist is always in his element on Puráṇic, Tantric and on all subjects connected with the modern literature of the Bráhmaṇs, to which he has done ample justice. The work is not very full in the technicalities of the medical science, of the different systems of philosophy and of the Vedas ; but we hope the Rájá will supply these deficiencies in the supplement he promises ; and in that expectation, strongly recommend to his notice Yaska's Nirukta, every page of which will supply him with new matter ; the first page of the Nighantu contains at least a hundred words not to be met with in his Lexicon.

The Sanskrita Press of Calcutta which we have had to notice more than once, has lately published a volume of selections from the Panchatantra and a Grammar of the Sanskrit language in Bengali, for the use of the Government Sanskrit College. Both the works are very well got up, and, we are satisfied, will prove highly useful. The Grammar is intended to do away with the old Pandit-system of teaching the language of the gods. It has no veneration for the mystic Sútras of Pánini and Vopadeva, and supplies their place with a series of simple and explicit rules in Bengali, with the aid of which one may learn the

classic language of India within a very reasonable time. The work is an elementary one, but the learned author, Paṇḍita Isvarachandra Vidyāsagara, promises a more comprehensive work on the subject, which we shall hail with much pleasure.

A new edition of the *works* of Bhāratachandra has issued from the *Purnachandrodaya* Press. It is, like most works published under native editorship, very imperfect. It has no preface, is full of errors, and abounds in doubtful readings, not to be met with in the most authentic editions of the work. In one place an entire poem, the celebrated Chorapanchásat, is introduced as the composition of Bhāratachandra. We are not aware if the bard of Nadiä himself ever claimed the authorship of this exquisite poem, but certain it is that none of his editors, and among them were the late excellent poet and scholar Rádhámohana Sena, and Paṇḍita Madanamohana Tarkalankára, has thought fit to attribute to him the credit of a composition, which is well known throughout India as the writing of Chora.

Rev. J. Long has published a sheet containing some English words similar to Bengali in sound and sense, and illustrative of the etymological affinity which exists between the English and Bengali languages. The specimens are in most instances very apposite, and we hope the learned author will continue his researches and some day favour the literary public with further contributions on this much neglected but interesting subject, on the philosophical principles of Bopp and Pott.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

FOR FEBRUARY, 1852.

The monthly meeting of the Asiatic Society was held on Wednesday, the 4th February, 1852.

Sir James Colville, President, in the Chair.

The Minutes of the last meeting were read and confirmed.

The following presents received since the December meeting were laid on the table:—

1st. From Dr. MacGowan, Ningpo. Two specimens of *Auricula* shells. In reference to these, Dr. MacGowan writes:—

“The Museum of the Asiatic Society of Bengal contains, I believe, no specimen of the artificial pearls of China, as formed in a species of the *Mytilus*, I have therefore procured a couple, of which I beg the Society’s acceptance. One of the specimens contains images of Buddha, and such are often employed to foster superstition.

“The method of forming them, is, placing in the living animal small metallic images, which occasion irritation; and in the course of a year they are found covered by the pearly secretion. When the foreign body is suffered to remain for several years, and the muscle continues to thrive, very beautiful pearly deposits are formed. The accompanying specimen shows only a year’s growth.

“Though the method has been long known to the Chinese, it is altogether probable that the discovery of Linnæus was wholly independent of any knowledge derived from this quarter of the world; otherwise he would not have accepted the reward and honour bestowed on him by our country, in consequence of the invention, which at the time promised to be one of great value.”

2nd. From Dr. Buist, a volume of very beautiful drawings of Northern Antiquities. Murray's Wind and Current Charts. And, Observations on Commander Montriou's Remarks.

3rd. From the Under-Secretary to the Government of Bengal. A Map of the Seebpore district in Upper Assam. The Journal of the Indian Archipelago for October; (two copies,) and Selections from the Records of the Bengal Government, No. 4.

4th. From N. Shaw, Esq., Secretary of the Geographical Society of London. The President's Annual Address to the Society.

5th. From the British Association for the Advancement of Sciences. Report of the Association, for 1850.

6th. From the Royal Geological Society of London. Quarterly Journal of the Society for May 1851.

7th. From the Royal Geographical Society of London. Journal of the Society, vol. II, Part II., and Captain Smith's Address to the Geographical Society of London.

8th. From the Société Asiatique of Paris. Journal Asiatique, No. 81.

9th. From the Government of India. The Trial of Jotee Persaud.

10th. From the Royal Society of Northern Antiquaries. Guide to Northern Archæology, by the Earl of Ellesmere.

11th. From the German Oriental Society. Zeitschrift der Deutschen Morganländischen Gesselschaft. Vol. 5th, Parts 1, 2.

12th. From the Royal Academy of Sciences of Turin. No. 51 of the Bulletin of the Academy.

13th. From the Royal Society of London. The Philosophical Transactions for 1851, Part 1st.

14th. From the Royal Bavarian Academy of Sciences. The Transactions of the Academy, Vol. VI., part 1st.

15th. From Dr. Albrecht Weber. The White Yajur Veda, Nos. 4, 5.

16th. From Dr. N. Wallich. An Extract from the Journal of the Entomological Society of London.

17th. From T. Maclure, Esq., Contributions to Meteorology and Geology.

18th. From the Royal Asiatic Society of Madras. Journal of the Society from July to December.

19th. From J. R. Logan, Esq., Journal of the Indian Archipelago, for November.

20th. From its Editor, the *Oriental Christian Spectator*, for December.

21st. From its Editor, the *Oriental Baptist*, for January, 1852.

22nd. From its Editor, the *Calcutta Christian Advocate*, for January, 1852.

23rd. From the Tattvabodhini Sabhá. The *Tattvabodhini Patriká*, No. 99.

24th. From the Curators of the Academy of Leyden. *Catalogus Bibliothecæ Lugdino—Batavorum*.

25th. From Rev. A. W. Wallis. The *Benares Magazine* from its commencement to the last number published.

26th. From the Rev. J. Long. The *Satyárnab* for December 1851, *Purushottama Chandriká*, *Apurva Upakhyáná* and *Kámákhyá Tantra*.

L. Clint, Esq., duly proposed and seconded at the last meeting, was balloted for, and elected an ordinary member.

Bábu Gyánendra Mohan Tagore was proposed an ordinary member of the Society by Mr. J. R. Colvin, and seconded by the President.

The draft of a letter to the Government of Bengal, with reference to the Museum of Economic Geology, in accordance with the resolution adopted at the last meeting, was read and approved of.

Letters of thanks were received from the Royal Geographical Society of London, for the Society's Journal, Nos. 291, 212, 213; from the Royal Institution, Albemarle Street, for the Journal, No. 218 and No. 7, 1850; and from the Bavarian Academy, for the *Bibliotheca Indica*, vol. 1st. Nos. 16, 17, 18, 27, 15, 23, 25, 19, 21, 22, 26, 28, 29, 30, and 31.

Letters were received from Captain Broome, Bábu Harimohan Sen, and Hon'ble I. Erskine, intimating their wish to withdraw from the Society.

Communications were read—

1st.—From Dr. Buist, on the Forfarshire and other Northern Antiquities.

2nd.—From Major Abbott, "on the Sites of Niakara and Bucephela, with two maps and an appendix on Taxila."

3rd.—From Captain Tickell, B. N. I., on the Heuma or “Shendoos,” a tribe inhabiting the hills of Arracan.

From Captain Layard. A note of the progress made by him in his researches into the Antiquities of Gour. The following is an extract from his note.

“My few days’ residence there have been very successful in finding relics and inscriptions. Impressions of the latter I have transferred to cloth, but as yet have not had time to examine them, however I much fear, they are nothing more than *sutturs* from the *koran*. In a few days I intend searching in Rajah Adisur’s Palace, where casually I have found one or two very curious and ancient Hindu Sculptures. Diggings would, I am sure, bring many curious carvings and remains to light, but the expense is a drawback.

*	*	*	*	*	*	*
*	*	*	*	*	*	*
*	*	*	*	*	*	*

There is a very ancient bastion and ghat called Pattal Chand, with many sculptured stones (apparently) lying in the clear water of a jheel, which is deep, I have little doubt but they would prove interesting, as they are, from traditions of the natives, remains of a Hindu Mutt and Ghat of great antiquity.”

Mr. J. R. Colvin drew the attention of the Society to the Græco-Bactrian antiquities which have lately been discovered in various parts of the Punjab, and Sir James Colvile mentioned that Mr. E. Bayley, C. S., was in possession of a very interesting collection of such antiquities, and had promised to write a memoir thereon.—The Secretary was requested to address a letter to Mr. Bayley on the subject.

Mr. Piddington exhibited a beautiful medal made of silver extracted from the Deoghur copper ores, and submitted an interesting paper on the subject for publication in the Journal.

Reports having been received from the Curator of the Musuem of Economic Geology and the Librarian, the meeting adjourned.

Confirmed 3rd March, 1852. (Signed) J. R. COLVIN, Chairman.

LIBRARY.

The following additions have been made to the Library since December last.

Presented.

Benares Magazine, Vols. 1 to 4.—BY THE EDITOR.

Proceedings of the Anniversary Meeting of the Royal Society of Northern Antiquities, for 1851.—BY THE SOCIETY.

Journal of the Indian Archipelago—for Oct. and Nov. 1851.—BY THE EDITOR.

Ditto, 2 copies.—BY THE GOVERNMENT OF BENGAL.

An Analytical Digest of all the reported cases decided in the Supreme Courts of Judicature in India, in the Courts of the Hon'ble East India Company, and on Appeal from India by Her Majesty in Council. By W. H. Morley, Vol. 1, Part VII.—BY THE AUTHOR.

Tattwabodhiní Patriká, No. 93.—BY THE TATTWABODHINI' SABHA'.

The Citizen Newspaper, for Jan.—BY THE EDITOR.

Purnachandrodaya, for January 1852.—BY THE EDITOR.

Papers and Proceedings of the Royal Society of Van Dieman's Land, Vol. 1, Parts I. II. III.

Purchased.

Scott's Bengal Directory, for 1852.

RÁJENDRALÁL MITTRA.

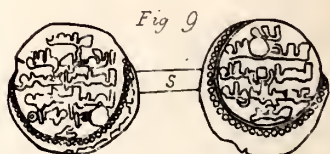
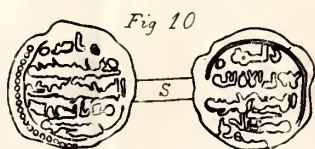
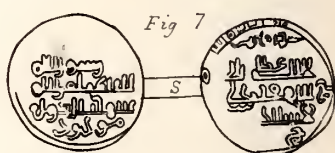
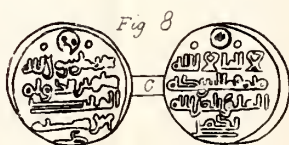
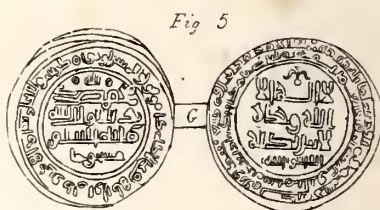
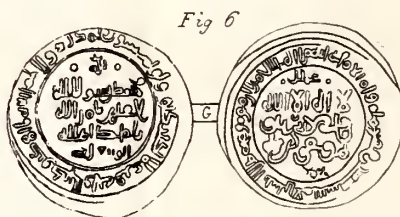
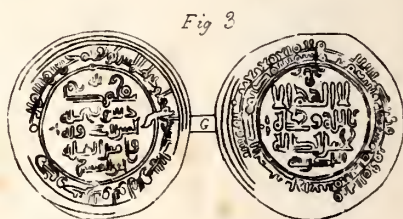
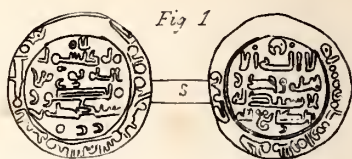
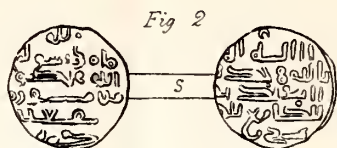
Meteorological Register kept at the Surveyor General's Office, Calcutta, for the Month of February, 1852.

Observations made at Sun-rise.				Maximum Pressure observed at 9 h. 50 m.				Observations made at Apparent Noon.									
Date.	Temperature.			Wind. Direction at Sun- rise.	Aspect of Sky.	Bar. red. to 32° F.	Temperature.			Wind. Direction at 9h 50m.	Aspect of Sky.	Bar. red. to 32° F.	Temperature.			Wind. Direction at Noon.	Aspect of Sky.
	Of Mer.	Of Air.	W. Bulb.				Of Mer.	Of Air.	W. Bulb.				Of Mer.	Of Air.	W. Bulb.		
1S.	Inches	62.3	60.0	W.	Clear	30.058	70.2	74.0	65.6	E. N. E.	Clear	29.997	78.0	81.0	66.4	N.	Clear
2	.979	62.3	60.2	W.	Ditto	.027	70.6	74.8	66.2	S. W.	Ditto	.977	78.3	81.2	66.4	W.	Ditto
3	.969	64.3	62.6	S. W.	Ditto	.036	71.2	74.2	66.4	S. S. W.	Ditto	.985	77.9	81.2	68.8	W. N. W.	Ditto
4	30.004	64.5	62.6	S. W.	Foggy	.079	96.0	74.2	69.8	S. W.	Ditto	30.058	76.0	78.7	70.6	W. N. W.	Ditto
5	.044	65.6	60.8	N. W.	Clear	.121	70.4	72.5	62.0	N. W.	Ditto	.095	76.4	78.0	61.6	N. W.	Ditto
6	.085	60.2	57.7	N. W.	Ditto	.146	68.6	72.3	62.3	N. N. W.	Ditto	.106	74.7	76.8	61.3	N. W.	Ditto
7	.015	59.7	57.0	N. N. W.	Ditto	.062	69.8	73.2	61.2	W. N. W.	Ditto	.011	76.0	78.2	62.8	W.	Ditto
8S.	29.936	60.0	69.8	W. N. W.	Foggy	.000	70.4	72.3	61.8	S. W.	Cloudy	29.937	76.0	77.7	68.5	S. W.	Cumuli
9	.990	68.3	66.2	N. W.	Cloudy	.066	71.2	74.1	69.1	N. W.	Clear	30.015	77.9	80.5	65.2	E.	Clear
10	.998	65.2	63.5	W.	Foggy	.069	72.0	75.1	70.1	N. W.	Ditto	.013	77.9	80.0	71.0	S. W.	Ditto
11	.965	66.5	66.4	E. S. E.	Clear	.024	73.9	77.1	71.9	S. S. W.	Ditto	.983	81.0	83.3	72.0	S. S. W.	Ditto
12	.955	70.0	70.2	W. S. W.	Foggy	.037	75.0	78.2	71.1	S. S. W.	Cumuli	.982	80.1	83.0	70.0	W. S. E.	Ditto
13	.961	69.6	70.3	S. W.	Ditto	.025	74.9	77.0	71.0	S. W.	Clear	.967	81.7	84.6	72.4	W. S. E.	Ditto
14	.971	69.0	67.5	E. S. E.	Clear	.028	74.0	77.0	69.8	E. S. E.	Ditto	.967	82.2	84.0	70.4	W. S. W.	Clear
15S.	.970	68.5	69.0	N. E.	Foggy	.022	74.2	77.8	68.9	S. W.	Ditto	.918	84.0	86.5	71.9	W. S. W.	Ditto
16	.911	69.2	65.6	S.	Clear	29.971	76.0	79.0	68.0	S. W.	Ditto	.932	83.5	87.0	67.0	N. W.	Ditto
17	.820	69.4	69.7	S. W.	Ditto	.972	75.0	79.0	69.3	N. W.	Ditto	.944	84.5	87.0	66.0	N. N. W.	Ditto
18	.906	67.8	68.0	N. N. W.	Ditto	.983	76.8	80.4	64.7	N. N. W.	Ditto	.989	82.0	84.0	62.5	N.	Cirro-strati
19	.970	70.9	70.2	N. N. W.	Cirro-strati	30.041	76.0	79.5	62.5	N. N. E.	Cirro-strati	.949	79.0	81.0	60.8	N. N. W.	Clear
20	.941	61.8	57.0	N. N. W.	Cloudy	29.991	72.0	75.9	60.9	W. S. W.	Cumuli	.863	79.5	82.9	63.9	N. N. W.	Scattered clouds
21	.908	66.8	67.0	W.	Ditto	.952	72.0	75.2	66.2	W.	Clear	30.009	79.3	82.0	72.3	S. W.	Clear
22S.	.958	66.0	64.0	W.	Foggy	30.038	71.9	75.5	68.3	S. W.	Scattered clouds	.019	81.5	84.9	72.3	S. S. W.	Cumuli
23	30.023	70.2	71.0	S. W.	Ditto	.027	76.6	79.8	74.4	S. W.	Clear	29.972	83.0	85.0	72.8	S.	Clear
24	29.974	70.4	68.7	E. N. E.	Cirro-strati	29.978	77.2	80.2	74.2	S. W.	Cirro-strati	.934	83.6	85.3	72.8	S.	Cirro-strati
25	.924	70.3	69.8	S. E.	Ditto	.888	78.0	80.6	75.2	S. S. W.	Cirro-cumuli	.852	84.0	85.5	76.0	S. W.	Cirro-cumuli
26	.878	72.0	72.6	S. E.	Clear	.906	78.0	81.0	68.3	W. N. W.	Clear	.251	83.4	85.0	69.0	W. N. W.	Clear
27	.835	71.2	70.8	W. E.	Ditto	.957	78.3	81.0	72.0	N. N. E.	Ditto	.920	83.8	86.0	69.0	N. N. W.	Ditto
28	.899	73.6	74.0	N. N. E.	Ditto	.980	77.0	79.3	74.8	W. N. W.	Ditto	.936	82.8	85.0	72.9	S. W.	Ditto
29S.	.914	74.0	72.4	W. S. W.	Ditto												
Mean	29.955	67.5	67.9	....	.....	30.019	73.6	76.7	68.6	....	.....	29.971	80.3	82.7	68.5	....	.....

[Meteorological Register, continued.]

Observations made at 2h. 40m.										Minimum Pressure observed at 4 p. m.										Observations made at sun-set.										Maximum and Minimum Thermometer.				Rain Gauges.		Moon's Phases.		
Temperature.			Wind.		Aspect of Sky.		Bar. red. to			Temperature.			Wind.		Aspect of Sky.		Bar. red. to			Temperature.			Wind.		Aspect of Sky.		Max. Mean. Min.		Max. Therm.		Feet. Upper Lower		Inch.		Feet. 5. Lower		Date.	
32° F.	Of Air.	W. Bulb.	Direction	at 4 p. m.	Direction	Aspect of Sky.	Inches	32° F.	Of Mer.	Of Air.	W. Bulb.	Direction	at 4 p. m.	Direction	Aspect of Sky.	Inches	32° F.	Of Mer.	Of Air.	W. Bulb.	Direction	at 4 p. m.	Direction	Aspect of Sky.	Max.	Mean.	Min.	in Sun's rays.	Upper	Lower	Inch.	Feet.	Lower	Upper	Lower	Date.		
29.942	82.8	65.7	NN.E			Clear	29.916	83.0	82.6	66.0	N.			N.	Clear	29.920	79.3	78.0	66.0	N.			Clear	84.0	72.3	60.5	100.0	..	..	..	..	..	..	..	1	
.893	82.7	84.2	66.8	W.N.W	Ditto	Ditto	.874	83.0	82.8	65.7	W.	Ditto	Ditto	W.	Ditto	Ditto	.873	78.8	77.6	69.8	W.	Ditto	Ditto	Ditto	84.2	72.4	60.6	97.3	..	..	..	..	..	..	..	2
.919	83.3	85.4	68.3	W.S.W	Ditto	Ditto	.899	84.3	84.0	68.0	S. W.	Ditto	Ditto	S. W.	Ditto	Ditto	.902	80.0	78.8	69.8	S. W.	Ditto	Ditto	Ditto	85.6	74.4	63.2	102.2	..	..	..	..	..	..	..	3
.970	82.3	84.2	71.8	S.	Ditto	Ditto	.943	83.4	83.4	70.8	S. W.	Ditto	Ditto	S.	Ditto	Ditto	.936	80.2	79.2	71.6	S.	Arro-strati	Ditto	Ditto	84.6	73.7	62.8	100.2	..	..	..	..	..	..	..	4
30.029	80.0	81.3	64.0	N. W.	Ditto	Ditto	30.011	80.9	80.2	64.0	N. W.	Ditto	Ditto	N. W.	Ditto	Ditto	30.021	78.0	75.9	65.3	N. W.	Clear	Ditto	Ditto	81.9	72.8	63.7	96.5	..	..	..	..	..	..	..	5
.014	79.5	80.8	62.5	NN.W	Ditto	Ditto	29.991	80.4	79.6	62.4	W.N.W	Ditto	Ditto	N. W.	Ditto	Ditto	29.991	76.0	74.0	60.3	N. W.	Ditto	Ditto	Ditto	81.4	70.1	58.7	96.4	..	..	..	..	..	..	..	6
29.920	80.3	81.3	64.7	N. W.	Ditto	Ditto	.900	81.2	80.6	64.2	N. W.	Ditto	Ditto	N. W.	Ditto	Ditto	.899	77.4	76.0	66.9	S. W.	Ditto	Ditto	Ditto	82.2	70.2	58.2	95.6	..	..	..	..	..	..	..	7
.879	81.5	81.4	73.2	S. W.	Cumuli	Cumuli	.866	82.5	82.2	70.0	S.	Ditto	Ditto	S.	Ditto	Ditto	.881	79.5	78.0	70.3	S. W.	Cumuli	Ditto	Ditto	82.7	74.1	65.4	99.8	..	..	..	..	..	..	..	8
.926	82.9	83.5	66.0	N. W.	Clear	Clear	.917	83.9	83.3	65.0	NN.W	Clear	Clear	NN.W	Clear	Clear	.926	80.2	78.4	68.5	NN.W	Clear	Clear	Ditto	84.1	75.1	66.1	101.5	..	..	..	..	..	..	..	9
.917	82.0	82.9	68.2	W.	Ditto	Ditto	.906	82.9	83.0	69.8	W.	Cumuli	Cumuli	W.	Cumuli	Cumuli	.900	80.2	78.0	70.0	E.N.E.	Cumuli	Cumuli	Ditto	83.5	73.6	63.7	96.5	..	..	..	..	..	..	..	10
.961	84.2	85.0	70.0	S.	Ditto	Ditto	.889	84.8	84.1	70.1	SS.W.	Clear	Clear	SS.W.	Clear	Clear	.906	81.2	79.8	65.7	S. W.	Clear	Clear	Ditto	85.6	75.2	64.7	101.1	..	..	..	..	..	..	..	11
.890	85.7	86.8	73.0	S. W.	Cumuli	Cumuli	.874	86.0	85.2	72.0	S. W.	Ditto	Ditto	S. W.	Ditto	Ditto	.890	83.0	82.1	72.0	S. W.	Cumuli	Cumuli	Ditto	86.8	77.5	68.2	101.2	..	..	..	..	..	..	..	12
.894	85.9	87.0	71.9	WSW	Ditto	Ditto	.880	86.6	86.9	72.1	S. W.	Ditto	Ditto	S. W.	Ditto	Ditto	.882	83.9	82.9	72.9	S. W.	Clear	Clear	Ditto	87.0	77.5	68.0	99.0	..	..	..	..	..	..	..	13
.880	86.9	88.1	70.6	S. W.	Clear	Clear	.873	88.0	88.6	70.3	WSW	Clear	Clear	WSW	Clear	Clear	.864	84.5	82.9	74.0	N. W.	Ditto	Ditto	Ditto	88.5	77.8	67.0	102.0	..	..	..	..	..	..	..	14
.839	89.5	91.2	70.0	WSW	Ditto	Ditto	.822	90.5	91.0	70.0	WSW	Ditto	Ditto	WSW	Ditto	Ditto	.821	86.5	84.6	72.5	N. W.	Ditto	Ditto	Ditto	89.8	78.3	66.7	105.5	..	..	..	..	..	..	..	15
.851	83.8	90.2	67.8	N. W.	Ditto	Ditto	.833	89.5	90.3	67.5	N. W.	Ditto	Ditto	N. W.	Ditto	Ditto	.834	85.4	83.5	70.3	S.	Ditto	Ditto	Ditto	90.4	79.0	67.6	102.5	..	..	..	..	..	..	..	16
.865	88.6	90.4	67.6	N. W.	Ditto	Ditto	.838	90.0	91.0	68.0	W.	Ditto	Ditto	W.	Ditto	Ditto	.841	85.6	83.5	71.0	W.	Ditto	Ditto	Ditto	90.9	78.6	66.2	103.2	..	..	..	..	..	..	..	17
.911	85.5	87.0	64.5	N. W.	Cirro-strati	Cirro-strati	.887	85.6	86.3	64.6	N. W.	Cloudy	Cloudy	N. W.	Cirro-strati	Cirro-strati	.888	83.6	83.4	68.0	N. W.	Cirro-strati	Cirro-strati	Ditto	87.2	78.0	68.7	101.5	..	..	..	..	..	..	..	18
.862	83.8	84.5	62.9	W.N.W	Cumulo-strati	Cumulo-strati	.838	84.7	83.7	61.7	W.	Scatd. clouds	Scatd. clouds	W.	Cumulo-strati	Cumulo-strati	.829	80.2	78.5	66.1	S.	Cloudy	Cloudy	Ditto	85.2	72.5	59.7	93.3	..	..	..	..	..	..	..	19
.953	84.8	86.5	68.9	WSW	Clear	Clear	.910	86.0	86.6	67.8	WSW	Clear	Clear	WSW	Clear	Clear	.830	82.4	81.0	70.0	S.	Cumulo-strati	Cumulo-strati	Ditto	87.0	76.3	65.6	100.0	..	..	..	..	..	..	..	20
.928	87.0	87.5	70.9	S.	Cumuli	Cumuli	.904	87.0	86.0	68.0	S.	Cumuli	Cumuli	S.	Cumuli	Cumuli	.913	82.6	80.5	64.5	S.	Clear	Clear	Ditto	86.5	75.5	64.5	103.0	..	..	..	..	..	..	..	21
.882	86.7	86.7	72.4	S.	Cirro-strati	Cirro-strati	.865	86.4	85.8	71.3	S.S.W	Clear	Clear	S.S.W	Clear	Clear	.865	82.0	80.5	67.0	S.	Cirro-strati	Cirro-strati	Ditto	88.0	78.3	68.6	101.5	..	..	..	..	..	..	..	22
.837	87.3	87.3	74.4	S.	Ditto	Ditto	.818	87.0	86.6	73.4	S.	Cirro-strati	Cirro-strati	S.	Cirro-strati	Cirro-strati	.846	83.0	81.4	73.2	S.	Clear	Clear	Ditto	87.8	78.2	68.6	100.6	..	..	..	..	..	..	..	23
.746	88.0	87.6	79.3	S.	Clear	Clear	.709	86.8	86.3	78.3	S.	Clear	Clear	S.	Clear	Clear	.713	83.3	82.2	76.0	S.S.W.	Clear	Clear	Ditto	88.8	78.5	68.2	101.6	..	..	..	..	..	..	..	24
.777	87.6	86.6	69.3	W.N.W	Ditto	Ditto	.757	86.5	89.0	70.2	S. W.	Ditto	Ditto	S. W.	Ditto	Ditto	.771	85.8	84.2	70.3	S.S.E.	Ditto	Ditto	Ditto	89.6	79.3	69.2	102.3	..	..	..	..	..	..	..	25
.833	88.0	88.9	69.6	N. W.	Ditto	Ditto	.818	88.7	89.4	69.7	N. W.	Ditto	Ditto	N. W.	Ditto	Ditto	.840	86.0	84.0	71.5	W.N.W	Ditto	Ditto	Ditto	89.4	80.8	72.2	103.0	..	..	..	..	..	..	..	26
.855	88.0	89.3	68.8	W.	Ditto	Ditto	.849	89.0	90.0	70.0	W.	Ditto	Ditto	W.	Ditto	Ditto	.858	86.0	84.4	73.2	W.	Ditto	Ditto	Ditto	89.6	81.1	72.5	104.8	..	..	..	..	..	..	..	27
29.893	85.0	86.4	69.0	29.872	85.7	85.7	68.5	29.878	82.2	80.6	69.5	86.7	76.2	65.7	100.8	0.00	0.00	28		
..	29	







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